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COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF FORESTS AND WATERS
DIVISION OF HYDROGRAPHY

HARRISBURG

STREAM FLOW RECORDS
OF
PENNSYLVANIA

1940

Prepared in Cooperation
with the
United States Department of the Interior
Geological Survey

FOR THE YEAR

October 1, 1939 to September 30, 1940

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STREAM FLOW RECORDS
OF
PENNSYLVANIA

for the year

OCTOBER 1, 1939 to SEPTEMBER 30, 1940

STREAM GAGING, PRECIPITATION, AND GROUND WATER

This report contains records for the year ending September 30, 1940. All stream-flow records previous to and including those for 1911, were published in one volume entitled, "Reports of the Water Supply Commission of Pennsylvania—1910 and 1911." For the years 1912 to 1921, they were published in the annual reports of the Water Supply Commission, with the records for 1917-18 and 1919-20 combined and issued in biennial form. Beginning with 1922, the records have been published by the Department of Forests and Waters, Division of Hydrography, in reports entitled, "Stream Flow Records of Pennsylvania." They were published annually with the exception of those for the 4 years, 1929-32, which were issued in one volume. Prior to 1913 they were compiled and published for calendar years. The 1914 records were tabulated for the 9 months, January to September. Subsequent records have been published for the water years, October 1 to September 30.

Since June 1, 1931, the water-resources investigations in Pennsylvania, including the collection of stream-flow data, have been carried on under cooperative agreement with the United States Department of the Interior, Geological Survey.

STREAM GAGING

On October 1, 1939, the beginning of the 1940 water year, 114 stream gaging stations were in operation. During the year, 5 old stations were discontinued and 22 new ones were established, thus making 131 stations in operation at the end of this report period.

The location and date of discontinuance of the old stations are as follows:

Loyalhanna Creek at New Alexandria, September 30, 1940.
Mahoning Creek near Dayton, September 30, 1940.
Redbank Creek at Mayport, September 30, 1940.
Stony Creek at Hollsopple, September 30, 1940.
Tionesta Creek at Nebraska, September 30, 1940.

The New Alexandria, Dayton, and Nebraska stations were discontinued owing to their locations being within the limits of impounding reservoirs that were being constructed for flood-protection purposes. In anticipation of the ultimate necessity of discontinuing these stations, the ones at Loyalhanna Creek Dam, Mahoning Creek Dam, and Tionesta Creek Dam were established previous to the period covered by this report. The Mayport and Hollsopple stations were discontinued because sufficient data had been collected to serve the purpose for which they were established.

The location and date of establishment of the new stations are as follows:

Conemaugh River at Tunnellton, October 11, 1939.
Little Mahoning Creek at McCormick, October 23, 1939.
Conewango Creek at Russell, November 10, 1939.
Shamokin Creek at Weigh Scale, November 13, 1939.
Kishocoquillas Creek at Reedsville, November 24, 1939.
Little Bald Eagle Creek at Tyrone, December 1, 1939.
Little Juniata River at Tyrone, December 6, 1939.
West Branch of Susquehanna River at Lewisburg, December 7, 1939.
Loyalhanna Creek at Kingston, December 16, 1939.
Hageman Run at South Williamsport, December 18, 1939.
Grafius Run at Williamsport, January 23, 1940.
Lackawanna River at Archbald, January 26, 1940.
Lackawanna River at Olyphant, February 14, 1940.
West Branch of Susquehanna River at Karthaus, February 21, 1940.
Paxton Creek near Penbrook, February 29, 1940.
West Branch of Susquehanna River at Keating, March 8, 1940.
West Branch of Susquehanna River near Keating, March 8, 1940.
Juniata River at Ardenheim, March 22, 1940.
Solomon Creek at Wilkes-Barre, March 22, 1940.
Lackawanna River at Forest City, March 26, 1940.
Youghiogheny River below Confluence, June 5, 1940.
Codorus Creek near York, August 1, 1940.

In general all of these new stations were established for the purpose of obtaining records for flood-control investigation.

At the beginning of the year, 86 of the gaging stations operated by the State were provided with wells, shelters, and water-stage recorders. None of the discontinued stations were supplied with recorder equipment. During the year, 11 nonrecording stations, Crooked Creek Dam (Ford City), East Conemaugh, Ferndale, Loyalhanna Creek Dam, Mahoning Creek Dam, Natrona, St. Charles, Sterling Run (auxiliary use only), Sugarcreek, Tionesta Creek Dam, and Youghiogheny River Dam were supplied with recorders. Fourteen newly-established stations, Archbald, Confluence, Karthaus, Kingston, Lewisburg, McCormick, Penbrook, Reedsville, South Williamsport, Tyrone (Little Bald Eagle Creek), Weigh Scale, Wilkes-Barre (Solomon Creek), Williamsport (Grafius Run), and York (Codorus Creek), were also supplied with recorders. Thus a total of 111 stations were provided with wells, shelters, and water-stage recorders at the end of the 1940 water year.

This volume contains data for 149 stations, as shown by the tables on pages 24-26. Discharge measurements for stations at which insufficient data have been collected for the translation of gage heights into terms of stream flow are listed with the miscellaneous discharge measurements made during the year. The stations at Ardenheim, Forest City, Keating, Keating (near), and Olyphant are gage-height stations. No discharge measurements are made at these stations and no information pertaining to them is published in this report.

The descriptions of the stations, and tables of the daily and monthly discharge are given for 123 stations that have a complete record for the year and for 14 stations that have a part-year record. The description of the station, the table of the daily mean elevation of water surface in the reservoir, and the table of the monthly contents and gain or loss in storage are given for the station on Pymatuning Reservoir at Pymatuning Dam. The description of the station, the table of the daily contents of the reservoir, and the table of the monthly contents and gain or loss in storage are given for the station on Crooked Creek Reservoir at Crooked Creek Dam for the term of record.

The table of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation has been omitted from this report.

A publication entitled "Natural Water Losses from Pennsylvania Drainage Basins" was made available for public distribution in 1940. It was compiled in summary form from the tables showing the run-off depth in inches, precipitation, and per cent run-off to precipitation in the 1921-39 Stream Flow Records of Pennsylvania.

Any additional information that may be available and of importance to the engineer making application of these gaging-station records can be obtained upon request to the Department of Forests and Waters, Division of Hydrography, Harrisburg, Pennsylvania.

The outstanding climatic conditions that were strongly reflected in the stream flow of Pennsylvania during the water year 1939-40 were the low temperature, the low precipitation during the period November to January, and the high precipitation during March, April, and May. The temperature during the water year 1939-40 was below normal and showed a deficiency of 19.5 degrees during 8 months of the year. This is in striking contrast to the temperature of the water year 1938-39, which was above normal and showed an excess of 20 degrees during 10 of the 12 months of that year. The monthly deviation in temperature ranged from an excess of 2.6 degrees in December to a deficiency of 9.1 degrees in January.

There was a deficiency of 4.52 inches in precipitation during the period November to January and an excess of 4.16 inches during the period February to May. The deficiencies throughout the State ranged from 0.85 to 1.85 inches and the excesses from 0.34 to 1.84 inches. In February there was an abnormal snowfall that averaged 19.3 inches for the entire State. This snowfall was nearly twice the usual amount. The greatest 24-hour snowfall, which occurred on February 13 and 14, was 24 inches at Towanda, Bradford County. The largest total snowfall for the month was 49.5 inches at Hollisterville, Wayne County.

In general the outstanding features relating to stream flow during the water year 1939-40 were the prolonged low-flow period from the beginning of October to late in March, the high flows late in March and early April, and the long periods during which flows were seriously affected by ice covers.

The flow during the period October to March may have averaged less than one-half the normal discharge for the period. Most of the streams receded during the early part of this period to their lowest flows for the year, although none of them reached the low flows previously recorded during the drought periods of earlier years. Ground-water elevations during most of the period were at lower levels than ever before recorded since State-wide observations were begun in November 1931.

Heavy rainfalls, accompanied by comparatively high temperatures in the latter part of March, melted considerable accumulated snow in the upper reaches of Pennsylvania streams and caused high stages in the streams of the Susquehanna and Ohio River Basins. The streams in the Delaware River Basin were not seriously affected. At Wilkes-Barre, the North Branch of Susquehanna River reached a stage that has been exceeded only twice in the preceding 156 years. Flood stages were exceeded to some extent along the West Branch of Susquehanna River and Susquehanna River below Sunbury. The heights recorded for the Juniata River and the streams in the Ohio Basin were high but did not exceed stages that are recorded at intervals of comparatively few years. During this period, most of the streams in the State reached their highest stages for the year.

The stream flow for April may have averaged more than two and one-half times the normal flow for that month. For the period May to July, the flow was approximately the usual amount. In August, it receded to about one-half the normal quantity while in September, it was slightly above the normal flow for the month.

Coincidental or otherwise, the precipitation on Pennsylvania for the water year 1939-40 was only 0.41 inch below the long-term average, while the flow in the principal drainage basins of the State was the same as the mean flow for the 31 years, 1910-40, as determined from the total discharge at gaging stations on the Delaware, Susquehanna, Allegheny,

Kiskiminetas, and Youghiogheny Rivers, which drain a total area of 39,475 square miles or an area equivalent to 87.5 per cent of that of Pennsylvania.

In the Delaware River, the flow for the 1940 water year was 3.5 per cent above the mean flow for the 31 years, 1910-40. The flow in the Susquehanna River was 2.0 per cent below the average flow for the 31 years, while the combined discharge at gaging stations on the Allegheny, Kiskiminetas, and Youghiogheny Rivers, in the Ohio River Basin, was 1.9 per cent above the mean for the same period.

PRECIPITATION

During the water year 1939-40, there were an equal number of months with deficiencies and months with excesses in precipitation. Two of the deficient months, June and September, received amounts only slightly below normal. There was a marked deficiency during the 3 months, November to January, and an outstanding excess during the next 4 months, February to May. The algebraic difference for the year as a whole, however, was less than one-half inch from the long term average as shown in the following table:

PRECIPITATION ON PENNSYLVANIA FOR THE YEAR ENDING SEPTEMBER 30, 1940

Month	Precipitation in Inches		
	53-year Average	1939-40	Departure
October	3.21	3.88	+0.67
November	2.82	.97	—1.85
December	3.09	2.24	— .85
January	3.23	1.41	—1.82
February	2.82	3.16	+ .34
March	3.53	4.89	+1.36
April	3.46	5.30	+1.84
May	3.84	4.46	+ .62
June	4.13	4.11	— .02
July	4.26	3.25	—1.01
August	4.21	4.57	+ .36
September	3.46	3.41	— .05
The Year	42.06	41.65	—0.41

The monthly and yearly precipitation on Pennsylvania, as deducted from the published records of the United States Weather Bureau, is shown in the following table:

PRECIPITATION ON PENNSYLVANIA FOR THE 53 YEARS ENDING SEPTEMBER 30, 1940

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1887–88	1.70	1.92	3.56	4.19	2.50	3.55	2.52	4.24	3.04	3.45	7.05	4.84	42.56
1888–89	4.02	3.37	3.14	3.54	1.96	2.90	4.50	5.91	5.43	6.80	3.24	5.05	49.86
1889–90	3.85	6.72	2.77	3.04	4.32	5.15	3.46	6.71	3.42	3.52	5.76	4.57	53.29
1890–91	5.87	1.49	3.97	3.64	4.61	5.10	2.08	2.12	4.50	6.32	5.09	2.39	47.18
1891–92	3.06	2.65	4.09	4.77	1.75	4.14	2.04	5.70	5.64	3.93	3.77	2.81	44.35
1892–93	.72	4.34	1.69	2.85	5.92	2.52	4.74	5.54	3.12	3.15	4.50	2.67	41.76
1893–94	3.26	2.93	3.06	2.29	3.53	1.63	3.62	8.88	2.57	2.32	1.84	6.30	42.23
1894–95	4.26	2.50	3.95	4.17	1.22	2.31	3.76	2.68	3.50	3.24	3.23	1.71	36.53
1895–96	1.99	2.48	3.22	1.43	4.90	4.51	1.75	2.85	4.64	6.89	2.22	4.82	41.70
1896–97	3.19	3.55	1.20	2.15	3.28	3.22	3.30	5.24	3.38	6.26	3.17	2.18	40.12
1897–98	1.32	5.28	3.95	4.25	2.23	4.31	2.93	5.11	2.79	3.36	6.60	1.70	43.83
1898–99	5.20	4.03	2.98	3.05	4.05	4.87	1.76	3.82	3.51	3.91	4.01	4.70	45.89
1899–00	1.55	2.66	3.04	2.64	4.22	3.61	1.57	2.79	3.60	4.86	3.33	1.77	35.64
1900–01	2.74	4.10	2.08	2.22	.96	4.14	5.41	5.56	3.47	3.88	6.81	3.39	44.76
1901–02	1.23	2.56	5.91	2.80	3.99	3.98	3.56	1.96	5.97	6.04	2.62	4.66	45.28
1902–03	4.64	1.53	5.54	3.31	4.49	4.52	3.53	1.67	6.53	5.36	5.29	2.09	48.50
1903–04	4.64	2.18	2.66	3.55	2.41	4.29	3.45	3.78	4.06	4.68	4.36	3.37	43.43
1904–05	2.87	1.14	2.48	3.70	1.70	3.86	2.84	2.59	4.39	4.87	5.71	3.41	39.56
1905–06	4.23	2.47	3.57	2.53	1.70	4.46	3.13	3.23	5.43	4.31	5.62	2.46	43.14
1906–07	4.46	1.48	3.97	4.36	1.91	4.26	2.64	3.08	4.99	3.84	2.94	6.37	44.30
1907–08	3.16	3.60	4.30	2.68	4.65	4.76	3.51	6.28	2.36	4.81	3.22	1.60	44.93
1908–09	1.95	.90	2.86	2.92	4.84	3.07	5.39	2.90	4.48	2.14	2.31	2.27	36.03
1909–10	2.27	1.40	3.39	5.55	3.59	.56	5.07	3.38	4.31	2.42	2.61	4.49	39.04
1910–11	1.91	2.45	2.65	3.54	2.27	2.57	3.79	1.97	4.71	2.81	7.63	5.29	41.59
1911–12	4.83	2.84	3.27	1.92	2.20	5.05	4.39	3.15	3.36	5.29	5.02	5.57	46.89
1912–13	2.74	2.17	3.27	4.95	1.84	5.27	3.82	3.86	2.26	4.16	2.09	3.28	40.31
1913–14	5.44	3.05	2.63	3.37	2.78	2.61	4.66	3.34	3.71	4.19	3.85	.99	40.62
1914–15	2.35	1.76	4.63	5.56	3.90	1.28	1.92	4.16	4.00	5.28	6.71	2.56	44.11
1915–16	2.65	2.18	4.06	2.42	3.08	4.12	3.65	3.19	6.14	4.45	2.57	3.77	42.28
1916–17	2.25	2.27	3.07	3.60	1.46	3.68	2.08	3.39	5.38	4.33	6.69	2.31	40.51
1917–18	6.38	.63	1.78	3.51	2.46	2.34	4.53	5.04	3.46	3.05	4.12	3.97	41.27
1918–19	3.17	2.03	3.38	2.53	2.23	3.57	2.70	5.80	3.90	5.90	5.43	2.07	42.71
1919–20	4.77	5.35	2.61	2.47	2.44	2.83	4.39	2.02	4.97	4.37	4.66	3.99	44.87
1920–21	1.67	3.54	3.28	2.58	2.59	3.33	3.11	3.93	3.12	4.13	3.83	4.68	39.79
1921–22	2.16	5.75	2.59	2.26	1.99	4.37	3.17	3.21	5.11	3.68	3.14	1.48	38.91
1922–23	2.51	1.21	2.75	4.26	2.16	2.49	2.94	3.50	2.73	4.24	3.10	3.55	35.44
1923–24	2.38	2.83	4.99	4.34	2.94	2.83	4.15	5.71	5.57	3.42	3.78	6.44	49.38
1924–25	.28	1.54	2.13	3.53	2.16	2.56	2.32	3.49	3.04	5.57	2.28	2.80	31.70
1925–26	4.83	3.56	1.72	2.80	4.06	1.91	2.03	1.78	3.63	3.82	5.69	5.81	41.64
1926–27	4.51	4.49	2.58	2.90	3.48	2.61	3.52	4.14	3.72	4.97	4.12	2.08	43.12
1927–28	6.40	4.95	4.41	2.08	3.42	3.24	5.50	2.23	7.96	5.44	4.60	2.33	52.56
1928–29	1.78	2.32	1.16	3.37	2.87	2.69	6.12	4.81	3.56	2.81	2.52	3.71	37.72
1929–30	5.59	3.39	2.77	2.25	2.69	3.03	2.71	3.03	4.20	2.23	1.47	2.45	35.81
1930–31	.99	1.48	2.29	1.46	1.98	2.96	3.33	5.28	3.71	5.28	4.01	3.15	35.92
1931–32	1.83	1.52	2.85	4.51	1.64	4.41	1.71	3.69	3.15	3.39	2.82	1.45	32.97
1932–33	5.31	4.75	2.19	2.00	2.30	5.33	4.49	5.86	2.58	4.26	7.61	4.66	51.34
1933–34	1.91	1.55	2.88	2.54	1.31	2.96	3.06	2.51	3.64	4.01	4.94	6.58	37.89
1934–35	1.46	3.61	2.55	3.08	2.67	2.62	2.56	3.00	4.22	5.63	3.91	3.51	38.82
1935–36	2.77	3.84	2.62	4.21	2.33	6.84	3.01	2.09	3.80	2.88	4.96	2.17	41.52
1936–37	3.69	2.40	4.19	6.36	2.32	2.00	5.53	3.39	4.37	4.47	5.43	1.90	46.05
1937–38	5.84	2.56	2.45	2.51	2.85	3.19	2.85	3.85	5.14	4.81	2.90	4.74	43.69
1938–39	1.81	3.10	2.56	3.14	4.45	3.59	3.70	1.58	4.46	3.12	2.98	2.95	37.44
1939–40	3.88	.97	2.24	1.41	3.16	4.89	5.30	4.46	4.11	3.25	4.57	3.41	41.65
Mean	3.21	2.82	3.09	3.23	2.82	3.53	3.46	3.84	4.13	4.26	4.21	3.46	42.06

GROUND WATER

A general summary of a historic nature which describes the State-wide program of observing ground-water conditions in Pennsylvania was printed in the Stream Flow Records of Pennsylvania for the year ending September 30, 1938.

The ground-water observations were continued in 1940 and weekly measurements were made at an average of 28 wells. The number of weekly well observations ranged from 26 to 29 during the year. A comparison of the averages of the 1939-40 water levels with those for corresponding dates in previous years shows a wide range and an unusual deviation from the general average.

Ground-water levels for October to December were at about the same elevation as the lowest recorded for those months. In January and February, they were from 0.5 to 2.0 feet lower than any previous low levels recorded for the months. During March there was a rapid replenishment of ground-water, which in April reached the highest stage recorded for that time of the year. During the period May to July, the ground-water was at about the same levels as the high records previously recorded for the period. In August, the levels receded to about the normal elevation. Late in August and early in September, there was a recharge of over 1 foot in ground-water and the levels remained about 1 foot above normal throughout the month.

The range in ground-water levels during the 1939-40 water year was 7.49 feet. This range has been exceeded only once during the term of record—it was 7.87 feet in 1936. During the year, new low levels were observed at 3 wells in October, 4 in December, 2 in February, 1 in March, and 1 in September. New high levels were recorded for 5 wells in April, 1 in June, and 1 in August. The unusual condition of ground-water levels reaching low stages in February and March and high stages in June and August indicates that low levels prevailed during the winter and high levels during spring and summer.

The following table shows not only the average ground-water level, referred to arbitrary datum, for the 9 years ending September 30, 1940, and for the period of record, but also the annual departure from the mean for the period of record, and the maximum and minimum recorded for each year and for the period of record.

GROUND-WATER LEVELS, IN FEET, AT OBSERVATION WELLS IN PENNSYLVANIA FOR THE 9 YEARS ENDING SEPTEMBER 30, 1940.

Year	Average	Departure	Maximum	Minimum
1931–32	12.18*	—0.69	14.95 Apr. 2	9.73 Sept. 24 and Oct. 1
1932–33	13.15	+ .28	15.40 Apr. 15	10.71 Oct. 8 and 15
1933–34	12.43	— .44	14.62 Apr. 14	10.77 Sept. 1
1934–35	13.02	+ .15	15.04 Mar. 23	10.79 Sept. 28
1935–36	12.56	— .31	17.87 Mar. 21	10.00 Sept. 26
1936–37	13.37	+ .50	16.65 May 1	10.10 Oct. 3
1937–38	13.50	+ .63	16.20 Mar. 19	10.76 Oct. 9 and Sept. 10
1938–39	12.92	+ .05	16.15 Apr. 1	9.87 Sept. 23
1939–40	12.61	— .26	17.54 Apr. 20	10.05 Oct. 21
Period	12.87	------	17.87 Mar. 21, 1936	9.73 Sept. 24 and Oct. 1, 1932

* Average for 45 weeks, Nov. 28, 1931, to Oct. 1, 1932.

The table shows that for the year as a whole the elevation of the ground water was below the average for the 9-year period. The low levels from October to February overbalanced the high elevation during the remainder of the year by about a quarter of a foot.

In January and February, the water levels reached the lowest average stage for those months during the 9 years of record. These low-water levels were the result of several months of deficient precipitation during which time there was very little ground-water recharge and long-continued decline of ground-water levels. An excess in precipitation augmented by melting snow caused the ground-water levels to rise rapidly from early in February to late in April with the result that in April the water level reached the highest stage recorded for that time of the year.

That remarkable recovery from a record-breaking low stage in January and February to a record-breaking high stage in April was of practical significance. It removed a serious threat of impending shortage in water supplies for all of those communities that obtained their water from wells or from spring-fed streams.

In April 1939, the water levels were at an exceptionally high stage, the average being only about two-thirds of a foot below the peak average reached in April 1940. The protracted drought, that followed, however, reduced the ground-water levels to a dangerously low stage during the period September 1939 to February 1940. The ground-water record discloses the fact that the functional storage capacity of the water-bearing rocks above drainage levels in Pennsylvania is so limited that serious depletion will occur if there is little or no recharge during the summer and fall, even though there had been almost complete replenishment in the previous spring.

The ground-water level is nearly always moving up or down and is rarely in a state of equilibrium. The water table is always higher in the late winter and spring than it is in the summer and fall. The ground-water storage is small in Pennsylvania; hence any change in the rate of precipitation causes a relatively large change in the water table. Except for the normal seasonal change, the water table in the State is hardly more predictable than the weather, even for a short period, because it follows the precipitation so closely.

The ground-water levels for Pennsylvania, including the locations and descriptions of observation wells, are published in detail by the Geological Survey in their Water Supply Papers entitled, "Water Levels and Artesian Pressure in Observation Wells in United States."

STREAM FLOW RECORDS

DEFINITIONS OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, and run-off in inches. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An "acre-foot" is equivalent to 43,560 cubic feet and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage and irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation" an abbreviation for the term "relation of gage height to discharge."

"Control"—a term used to designate the natural section or stretch of the channel or artificial structure below the gage which determines the stage-discharge relation at the gage.

CONVERSION TABLES

The following tables afford a ready means of conversion between the terms in common use in hydraulic computations.

Discharge in second-feet per square mile into run-off in depth in inches

Discharge (second-feet per square mile)	Run-off (depth in inches)				
	1 day	28 days	29 days	30 days	31 days
1	0.03719	1.041	1.079	1.116	1.153
2	.07438	2.083	2.157	2.231	2.306
3	.11157	3.124	3.236	3.347	3.459
4	.14876	4.165	4.314	4.463	4.612
5	.18595	5.207	5.393	5.578	5.764
6	.22314	6.248	6.471	6.694	6.917
7	.26033	7.289	7.550	7.810	8.070
8	.29752	8.331	8.628	8.926	9.223
9	.33471	9.372	9.707	10.041	10.376

Note—For part of a month multiply the run-off for 1 day by the number of days.

Discharge in second-feet into run-off in acre-feet

Discharge (second-feet)	Run-off (acre-feet)				
	1 day	28 days	29 days	30 days	31 days
1	1.983	55.54	57.52	59.50	61.49
2	3.967	111.1	115.0	119.0	123.0
3	5.950	166.6	172.6	178.5	184.5
4	7.934	222.1	230.1	238.0	246.0
5	9.917	277.7	287.6	297.5	307.4
6	11.90	333.2	345.1	357.0	368.9
7	13.88	388.8	402.6	416.5	430.4
8	15.87	444.3	460.2	476.0	491.9
9	17.85	499.8	517.7	535.5	553.4

Note—For part of a month multiply the run-off for 1 day by the number of days.

Discharge in second-feet into run-off in millions of cubic feet

Discharge (second-feet)	Run-off (millions of cubic feet)				
	1 day	28 days	29 days	30 days	31 days
1	0.0864	2.419	2.506	2.592	2.678
2	.1728	4.838	5.012	5.184	5.356
3	.2592	7.257	7.518	7.776	8.034
4	.3456	9.676	10.02	10.37	10.71
5	.4320	12.10	12.53	12.96	13.39
6	.5184	14.51	15.04	15.55	16.07
7	.6048	16.93	17.54	18.14	18.75
8	.6912	19.35	20.05	20.74	21.42
9	.7776	21.77	22.55	23.33	24.10

Note—For part of a month multiply the run-off for 1 day by the number of days.

Discharge (second-feet)	Run-off (millions of gallons)				
	1 day	28 days	29 days	30 days	31 days
1	0.6463	18.10	18.74	19.39	20.04
2	1.293	36.20	37.48	38.78	40.08
3	1.939	54.30	56.22	58.17	60.12
4	2.585	72.40	74.96	77.56	80.16
5	3.232	90.50	93.70	96.95	100.2
6	3.878	108.6	112.4	116.3	120.2
7	4.524	126.7	131.2	135.7	140.3
8	5.170	144.8	149.9	155.1	160.3
9	5.817	162.9	168.7	174.5	180.4

Note—For part of a month multiply the run-off for 1 day by the number of days.

Velocity in feet per second into velocity in miles per hour

(1 foot per second=0.681818 mile per hour, or very nearly two-thirds mile per hour; 1 mile per hour=1.46666 feet per second. In computing the table the values 0.68182 and 1.4667 were used).

Feet per second (units)	Miles per hour for tenths of foot per second									
	0	1	2	3	4	5	6	7	8	9
0	0.000	0.068	0.136	0.205	0.273	0.341	0.409	0.477	0.545	0.614
1	.682	.750	.818	.886	.995	1.02	1.09	1.16	1.23	1.30
2	1.36	1.43	1.50	1.57	1.64	1.70	1.77	1.84	1.91	1.98
3	2.05	2.11	2.18	2.25	2.32	2.39	2.45	2.52	2.59	2.66
4	2.73	2.80	2.86	2.93	3.00	3.07	3.14	3.20	3.27	3.34
5	3.41	3.48	3.55	3.61	3.68	3.75	3.82	3.89	3.95	4.02
6	4.09	4.16	4.23	4.30	4.36	4.43	4.50	4.57	4.64	4.70
7	4.77	4.84	4.91	4.98	5.05	5.11	5.18	5.25	5.32	5.39
8	5.45	5.52	5.59	5.66	5.73	5.80	5.86	5.93	6.00	6.07
9	6.14	6.20	6.27	6.34	6.41	6.48	6.55	6.61	6.68	6.75

CONVENIENT EQUIVALENTS

LENGTH

1 inch=1/12 foot=0.027778 yard=0.000015783 mile=2.54 centimeters.
1 foot=12 inches=1/3 yard=0.00018939 mile=0.3048 meter.
1 yard=36 inches=3 feet=0.00056818 mile=0.9144 meter.
1 mile=63,360 inches=5,280 feet=1,760 yards=1.60935 kilometers.
1 meter=100 centimeters=0.001 kilometer=39.37 inches=3.2808 feet=1.0936 yards=0.00062137 mile

SURFACE

1 square inch=0.006944 square foot=0.0007716 square yard=0.0000001594 acre=0.0000000002491 square mile=6.45163 square centimeters.
1 square foot=144 square inches=1/9 square yard=0.000022957 acre=0.00000003587 square mile=0.092903 square meter.
1 square yard=1.296 square inches=9 square feet=0.0002066 acre=0.0000003228 square mile =0.836l3 square meter.
1 acre=6,272.640 square inches=43.560 square feet=4,840 square yards=0.0015625 square mile =208.71 feet square=0.404687 hectare.
1 square mile=4.014.489,600 square inches=27,878,400 square feet=3,097,600 square yards= 640 acres=259 hectares.
1 square meter=10,000 square centimeters=0.0001 hectare=0.000001 square kilometer=1,550 square inches=10.7639 square feet=1.19598 square yards=0.0002471 acre= 0.0000003861 square mile.

VOLUME

1 cubic inch=0.004329 United States gallon=0.0006787 cubic foot=16.3872 cubic centimeters.
1 United States gallon=231 cubic inches=0.13368 cubic foot=0.00000307 acre foot=3.78543 liters.
1 cubic foot=1.728 cubic inches=7.4805 United States gallons=0.037037 cubic yards= 0.000022957 acre-foot=28.317 liters.
1 cubic yard=46.656 cubic inches=27 cubic feet=0.00061983 acre-foot=0.76456 cubic meter.
1 acre-foot=325.851 United States gallons=43,560 cubic feet=1,613,333 cubic yards=1,233.49 cubic meters.
1 cubic meter, stere, or kiloliter=1,000,000 cubic centimeters=1,000 liters=61,023.4 cubic inches=264.17 United States gallons=35.3145 cubic feet=1.30794 cubic yards= 0.000810708 acre-foot.

HYDRAULICS

1 United States gallon of water weighs 8.34 pounds avoirdupois.
1 cubic foot of water weighs 62.5 pounds avoirdupois.
1 second-foot=7.48 United States gallons per second=448.8 United States gallons per minute =26,929.9 United States gallons per hour=646,317 United States gallons per day.
1 second-foot=60 cubic feet per minute=3,600 cubic feet per hour=86,400 cubic feet per day =31,536,000 cubic feet per year=0.000214 cubic mile per year.
1 second-foot=0.9917 acre-inch per hour=1.983471 acre-foot per day=723.996942 acre-foot per year.
1 second-foot=0.028317 cubic meter per second=1.699 cubic meters per minute=101.941 cubic meters per hour=2,446.58 cubic meters per day.
1 second-foot for 1 year (365 days) will cover 1 square mile, 1.1312 feet or 13.5744 inches deep.
1 second-foot falling 10 feet=1.135 horsepower.
100 United States gallons per minute=0.223 second-foot=0.442 acre-foot in one day.
1 million gallons per day=1.55 second-feet=3.07 acre-feet per day=2.629 cubic meters per minute.
1 million gallons per month=0.05525 second-feet for one 28-day month=0.05334 second-foot for one 29-day month=0.05157 second-foot for one 30-day month=0.04990 second-foot for one 31-day month.
1,000,000,000 (1 United States billion) cubic feet=11,570 second-feet for one day=413 second-feet for one 28-day month=399 second-feet for one 29-day month=386 second-feet for one 30-day month=373 second-feet for one 31-day month.
1 horsepower=1 second foot falling 8.8 feet.
1 horsepower=1 second-foot folling 11.0 feet, 80 percent efficiency.
1 horsepower=5,694,120 foot-gallons per day=550 foot-pounds per second=33,000 foot-pounds per minute=1,980,000 foot-pounds per hour=2,545 British thermal units per hour=76 kilogrammeters per second=1.27 kilogrammeters per minute=746 watts.
1.3405 horsepower=1 kilowatt.
1 inch deep on 1 square mile=2,323,200 cubic feet=0.0737 second-foot for 1 year.
1 foot deep (head of 1 foot)=0.434 pound pressure on 1 square inch.
1 cubic meter per minute=0.5886 second-foot=4.403 United States gallons per second=1.1674 acre-feet per day.
1 foot per second=0.68 mile per hour=1.097 kilometers per hour.
Acceleration of gravity, g=32.16 feet per second.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1939, and ending September 30, 1940. At the beginning of January in Pennsylvania and in most parts of the United States, much of the precipitation in the preceding three months is stored in the form of snow or ice, or in ponds, lakes, and swamps, or as underground water, and this stored water passes off in the streams during the spring months. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore, the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff or chain gage, or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge.

Rating tables giving the discharge for any stage are computed from the rating curves which are constructed from the discharge measurements. The application of the daily gage height to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is computed.

The data presented for each gaging station covered by this report comprise a description of the station, a table showing the daily discharge of the stream, and table of monthly and yearly discharge and run-off. For stations with insufficient base data to determine the daily discharge, the results of current-meter discharge measurements are published in the table of miscellaneous discharge measurements.

The description of the station gives, in addition to statements regarding location and type of gage, information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded discharges, accuracy of the records, and average discharge for the stations that have a record for ten or more years. The maximum discharge given under "Extremes" represents the crest discharge determined from records of stage by water-stage recorders, or in case of nonrecording gages it is determined from floodmarks or from graphs based on gage readings made once daily or more frequently.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the daily gage height, which may be the mean of two or more readings in the case of a nonrecording gage, or the mean daily gage height obtained from a water-stage recorder graph.

At stations on streams subject to sudden or rapid diurnal fluctuation, the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge at regular intervals during the day or by using an instrument known as the discharge integrator, which has a setting to correspond with the rating curve of a station and determines the mean daily discharge from a continuous gage-height graph.

At most gaging stations in Pennsylvania and in the northern part of the United States, the stage-discharge relation is affected by ice, making it impossible to compute the discharge in the normal manner. Discharge for periods of ice effect is computed on the basis of available winter discharge measurements and gage heights, due consideration being given to all available information relative to temperature and precipitation records, notes by gage observers and engineers, and comparable records of discharge for stations in the same or nearby basins. The periods of ice effect and the days during the winter period when discharge measurements were made are indicated by symbols and footnotes in connection with the station records.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures for that month given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum," the quantity given is the minimum daily discharge. The column

headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based computations recorded in the remaining columns, which are defined on page 17.

ACCURACY OF FIELD DATA AND COMPUTED RECORDS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that the records are accurate within 5 per cent; "good" within 10 per cent; "fair" within 15 per cent; and "poor" within 20 per cent or more.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area.

The table of monthly discharge gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

COOPERATION

Financial assistance was rendered by the Corps of Engineers, U. S. Army, Pittsburgh, Pa., in the operation and maintenance of all gaging stations located in the Ohio River Basin excepting Dayton, Greenville, Nebraska, New Alexandria, Orangeville, Piney, Pymatuning Dam (Reservoir), Pymatuning Dam (Shenango River), Pymatuning Dam (Sugar Run), and Salisbury. In the Susquehanna River Basin the Corps of Engineers, U. S. Army, Baltimore, Md., rendered financial assistance in the establishment and operation of the stations at Archbald, Ardenheim, Forest City, Karthaus, Keating, Keating (near), Lewisburg, Olyphant, Penbrook, Reedsville, South Williamsport, Tyrone (Little Bald Eagle Creek), Tyrone (Little Juniata River), Weigh Scale, Wilkes-Barre (Solomon Creek), Williamsport (Grafius Run), and York (Codorus Creek). Financial assistance was rendered by the City of Harrisburg in the establishment and operation of the Carsonville, Dauphin, and Manada Gap gaging stations in the Susquehanna River Basin. The stream-flow records for the Delaware River Basin stations at Port Jervis, Belvidere, Riegelsville, and Trenton are furnished by the United States Geological Survey offices at Albany, N. Y., and Trenton, N. J.

Records for the Susquehanna River Basin stations at Knoxville, Nelson, Tioga (Mill Creek), Tioga (River), and Waverly, N. Y. are furnished by the United States Geological Survey office at Albany, N. Y. Stream-flow records for the Salisbury station in the Ohio River Basin and the Bedford Valley station in the Potomac River Basin are furnished by the United States Geological Survey office at College Park, Md.

Acknowledgment is due the following agencies for equipment and assistance in the collection of records:

City of Lancaster, Pa., (Lancaster).
City of Philadelphia, Pa., (Philadelphia).
City of Wilmington, Del., (Chadds Ford).
Clarion River Power Co., Johnstown, Pa., (Piney).
Glatfelter Paper Co., Spring Grove, Pa., (Spring Grove).
Hayt Engineering Corporation, Corning, N. Y., (Loyalsock).
Palmerton Water Co., Palmerton, Pa., (Palmerton).
Panther Valley Water Co., Lansford, Pa., (Tamaqua).
Pennsylvania Edison Co., Altoona, Pa., (Saxton).
Pennsylvania Power and Light Co., Allentown, Pa., (Wilsonville).
Philadelphia Electric Co., Philadelphia, Pa., (Harrisburg, Lancaster and Manchester).
Philadelphia Suburban Water Co., Bryn Mawr, Pa., (Langhorne).
Safe Harbor Water Power Corp., Baltimore, Md., (Marietta).
United Engineering and Foundry Co., Vandergrift, Pa., (Vandergrift).
United States Engineer Office, Baltimore, Md., (Dalmatia, Gapsville, Huntingdon, Marklesburg, Millerstown, Penns Creek, Shermansdale, and Wapwallopen).
United States Engineer Office, Philadelphia, Pa., (Bethlehem and Tannery).
United States Weather Bureau, Harrisburg, Pa., (Harrisburg, Mapleton Depot, Newport, Renovo, Sunbury, Towanda, Wilkes-Barre, and Williamsport).
United States Weather Bureau, Pittsburgh, Pa., (Beaver Falls, Confluence, Franklin, and Seward).
United States Weather Bureau, Trenton, N. J., (Hawley).
Westinghouse Electric and Mfg. Co., E. Pittsburgh, Pa., (Trafford).
West Penn Power Co., Pittsburgh, Pa., (Connellsville).
West Virginia Pulp and Paper Co., Williamsburg, Pa., (Williamsburg).
York Water Co., York, Pa., (South Branch of Codorus Creek).

The Commonwealth of Pennsylvania is divided into six drainage basins: Delaware, Susquehanna, Potomac, Genesee, Erie, and Ohio. The hydrographic data in the following pages are divided into four groups corresponding to the basins in which the stations are located. There are no gaging stations in the Erie or Genesee Basins. The information available for each station is shown in the description of the station. The stations in each basin are shown in the following tables.

GAGING STATIONS IN DELAWARE RIVER BASIN*

Stream	*Location*
Delaware River	Port Jervis, N. Y.
Delaware River	Belvidere, N. J.
Delaware River	Riegelsville, N. J.
Delaware River	Trenton, N. J.
Lackawaxen River	Hawley
Wallenpaupack Creek	Wilsonville
Bushkill Creek	Shoemakers
Lehigh River	Tannery
Lehigh River	Bethlehem
Aquashicola Creek	Palmerton
Tohickon Creek	Pipersville
Neshaminy Creek	Langhorne
Schuylkill River	Pottstown
Schuylkill River	Philadelphia
Little Schuylkill River	Tamaqua
Perkiomen Creek	Graters Ford
Ridley Creek	Moylan
Chester Creek	Chester
Brandywine Creek	Chadds Ford

GAGING STATIONS IN SUSQUEHANNA RIVER BASIN*

Stream	*Location*
North Branch of Susquehanna River	Waverly, N. Y.
North Branch of Susquehanna River	Towanda
North Branch of Susquehanna River	Wilkes-Barre
North Branch of Susquehanna River	Danville
Susquehanna River	Sunbury
Susquehanna River	Harrisburg
Susquehanna River	Marietta
Tioga River	Tioga
Mill Creek	Tioga
Cowanesque River	Nelson
Troups Creek	Knoxville
Towanda Creek	Monroeton
Tunkhannock Creek	Dixon
Lackawanna River	Forest City
Lackawanna River	Archbald
Lackawanna River	Olyphant
Lackawanna River	Old Forge
Solomon Creek	Wilkes-Barre
Wapwallopen Creek	Wapwallopen
Fishing Creek	Bloomsburg
West Branch of Susquehanna River	Bower
West Branch of Susquehanna River	Karthaus
West Branch of Susquehanna River at	Keating
West Branch of Susquehanna River near	Keating
West Branch of Susquehanna River	Renovo
West Branch of Susquehanna River	Williamsport
West Branch of Susquehanna River	Lewisburg
Clearfield Creek	Dimeling
Sinnemahoning Creek	Sinnemahoning
Driftwood Branch of Sinnemahoning Creek	Sterling Run
North Bald Eagle Creek	Beech Creek Station

* For information available on each station, see description of station.

GAGING STATIONS IN SUSQUEHANNA RIVER BASIN (Continued)*

Stream	*Location*
Pine Creek	Cedar Run
Lycoming Creek	Trout Run
Hageman Run	South Williamsport
Grafius Run	Williamsport
Loyalsock Creek	Loyalsock
Shamokin Creek	Weigh Scale
Penn Creek	Penns Creek
Mahantango Creek East	Dalmatia
Frankstown Branch of Juniata River	Williamsburg
Juniata River	Ardenheim
Juniata River	Mapleton Depot
Juniata River	Newport
Little Juniata River	Tyrone
Little Juniata River	Spruce Creek
Little Bald Eagle Creek	Tyrone
Standing Stone Creek	Huntingdon
Raystown Branch of Juniata River	Saxton
Dunning Creek	Belden
Brush Creek	Gapsville
Great Trough Creek	Marklesburg
Aughwick Creek	Three Springs
Kishacoquillas Creek	Reedsville
Tuscarora Creek	Port Royal
Cocolamus Creek	Millerstown
Sherman Creek	Shermandale
Clark Creek	Carsonville
Stony Creek	Dauphin
Conodoquinet Creek	Hogestown
Paxton Creek	Penbrook
Swatara Creek	Harper Tavern
Manada Creek	Manada Gap
West Conewago Creek	Manchester
Codorus Creek	Spring Grove
Codorus Creek	York
South Branch of Codorus Creek	York
Conestoga Creek	Lancaster

GAGING STATIONS IN POTOMAC RIVER BASIN*

Stream	*Location*
Evitts Creek	Bedford Valley
Licking Creek	Sylvan

GAGING STATIONS IN OHIO RIVER BASIN*

Stream	*Location*
Allegheny River	Eldred
Allegheny River	Kinzua
Allegheny River	Franklin
Allegheny River	Parkers Landing
Allegheny River	Rimer
Allegheny River	Kittanning
Allegheny River	Natrona

* For information available on each station, see description of station.

GAGING STATIONS IN OHIO RIVER BASIN (Continued)*

Stream	*Location*
Ohio River	Sewickley
Conewango Creek	Russell
Brokenstraw Creek	Youngsville
Tionesta Creek	Lynch
Tionesta Creek	Nebraska
Tionesta Creek	Tionesta Creek Dam
Oil Creek	Rouseville
French Creek	Carters Corners
French Creek	Venango
French Creek	Utica
Sugar Creek	Sugarcreek
Clarion River	Cooksburg
Clarion River	Piney
Redbank Creek	Mayport
Redbank Creek	St. Charles
Mahoning Creek	Punxsutawney
Mahoning Creek	Dayton
Mahoning Creek	Mahoning Creek Dam
Little Mahoning Creek	McCormick
Crooked Creek	Idaho
Crooked Creek Reservoir	Crooked Creek Dam
Crooked Creek	Crooked Creek Dam
Stony Creek	Hollsopple
Stony Creek	Ferndale
Conemaugh River	Seward
Conemaugh River	Tunnellton
Kiskiminetas River	Vandergrift
Little Conemaugh River	East Conemaugh
Blacklick Creek	Blacklick
Loyalhanna Creek	Kingston
Loyalhanna Creek	New Alexandria
Loyalhanna Creek	Loyalhanna Creek Dam
Monongahela River	Greensboro
Monongahela River	Charleroi
Monongahela River	Braddock
South Fork of Tenmile Creek	Jefferson
Youghiogheny River	Younghiogheny River Dam
Youghiogheny River	Confluence
Youghiogheny River	Connellsville
Youghiogheny River	Sutersville
Caselman River	Markleton
Big Piney Run	Salisbury
Laurel Hill Creek	Ursina
Turtle Creek	Trafford
Beaver River	Wampum
Beaver River	Beaver Falls
Pumatuning Reservoir	Pymatuning Dam
Shenango River	Pymatuning Dam
Shenango River	Sharpsville
Sugar Run	Pymatuning Dam
Little Shenango River	Greenville
Pymatuning Creek	Orangeville
Connoquessing Creek	Hazen
Slippery Rock Creek	Wurtemburg

*For information available on each station, see description of station.

GAGING-STATION RECORDS

DELAWARE RIVER BASIN

Delaware River at Port Jervis, N. Y.

Location.- Water-stage recorder, lat. 41°22'20", long. 74°41'50", near highway bridge at Port Jervis, Orange County, 1¼ miles upstream from Neversink River. Datum of gage is 415.35 feet above mean sea level (general adjustment of 1929).
Drainage area.- 3,076 square miles.
Records available.- October 1904 to September 1940.
Average discharge.- 36 years, 5,567 second-feet.
Extremes.- Maximum discharge during year, 113,000 second-feet Apr. 1 (gage height, 15.55 feet), from rating curve extended logarithmically above 75,000 second-feet; minimum, 356 second-feet (regulated) Aug. 26 (gage height, 1.01 feet); minimum daily, 652 second-feet Aug. 25.

1904-40: Maximum discharge, that of Apr. 1, 1940; minimum, 175 second-feet Sept. 22, 23, 1908 (gage height, 0.60 foot); minimum daily, 175 second-feet Sept. 22, 23, 1908.

Maximum discharge known, about 155,000 second-feet Oct. 10, 11, 1903 (gage height, 23.3 feet), from rating curve extended logarithmically above 35,000 second-feet.

Maximum stage known, 25.5 feet Mar. 8, 1904 (ice jam).

Remarks.- Records excellent except those for periods of ice effect, which are fair. Large diurnal fluctuations at medium and low stages caused by operation of power plants on tributary streams. Flow considerably regulated by storage in Lake Wallenpaupack and Toronto, Cliff Lake, and Swinging Bridge Reservoirs (combined capacity, 12,300,000,000 cubic feet).
Cooperation.- Records furnished by U. S. Geological Survey, Albany, N. Y.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,870	9,680	2,270	2,200	1,020	1,650	86,900	8,000	8,000	4,450	2,110	14,700
2	2,700	10,700	2,260	2,000	1,000	1,600	40,400	8,760	9,720	5,920	1,810	17,300
3	3,330	8,440	2,340	1,850	1,000	1,600	30,200	9,510	9,380	4,590	1,560	10,200
4	3,600	6,960	2,950	1,750	980	1,900	29,800	8,530	7,670	3,730	872	6,130
5	3,270	5,960	4,080	1,650	980	2,400	39,000	7,780	6,520	3,300	1,240	4,510
6	2,490	6,780	3,740	1,550	1,020	3,000	33,500	7,020	5,920	2,890	1,850	3,400
7	2,240	7,130	3,290	1,450	1,140	3,000	30,000	6,360	5,030	2,520	1,940	2,650
8	1,950	7,050	3,000	1,400	1,160	2,800	34,200	5,810	3,980	2,480	1,710	2,190
9	1,790	7,420	2,880	1,300	1,120	2,600	67,100	5,490	3,430	2,560	1,740	2,100
10	1,890	7,660	2,730	1,250	1,100	2,450	46,400	5,020	3,830	2,430	1,730	2,280
11	1,870	6,560	3,140	1,220	1,400	2,350	30,300	4,200	4,150	2,290	972	2,280
12	1,800	6,930	3,330	1,200	2,000	2,300	26,900	3,800	3,870	2,650	935	2,140
13	1,420	6,810	2,910	1,250	2,200	2,250	31,800	3,840	3,920	2,800	1,640	2,080
14	1,230	6,200	2,900	1,350	2,100	2,250	23,400	3,880	3,350	2,410	1,680	1,790
15	1,320	5,550	2,640	2,160	1,850	2,700	17,800	3,790	2,770	2,220	1,630	1,500
16	1,140	4,770	2,430	2,460	1,650	7,000	15,800	4,090	2,290	2,110	1,580	1,600
17	1,800	4,530	2,480	2,350	1,600	6,000	14,200	6,640	2,520	1,910	1,710	1,780
18	1,740	4,420	2,760	2,100	1,550	5,400	13,900	8,260	2,660	1,980	1,220	1,540
19	1,150	3,860	2,940	1,850	1,800	5,600	17,000	6,380	2,530	2,200	1,080	1,700
20	828	3,830	3,510	1,650	1,900	6,000	18,900	5,950	2,230	1,690	1,610	1,670
21	1,310	4,240	8,020	1,500	1,850	6,600	32,900	6,820	2,080	1,490	1,450	1,620
22	1,350	3,730	9,350	1,400	1,800	6,200	32,200	7,940	1,790	1,500	1,390	1,320
23	2,430	3,050	7,150	1,350	1,700	5,400	23,200	7,750	1,380	2,030	1,540	1,410
24	2,450	2,950	5,680	1,300	1,650	4,700	18,600	7,000	2,030	2,070	1,250	1,490
25	2,300	2,960	4,400	1,250	1,600	4,300	15,600	6,530	4,140	1,970	652	1,660
26	2,050	3,030	3,800	1,200	1,550	4,100	13,300	5,980	4,410	1,750	674	1,670
27	2,830	2,630	3,400	1,160	1,500	4,000	11,100	8,460	3,690	1,660	1,680	1,660
28	5,150	2,930	3,000	1,120	1,600	4,000	9,780	7,960	3,190	1,650	2,000	1,580
29	7,160	2,540	2,700	1,080	1,700	4,620	9,020	7,690	4,280	1,520	2,310	1,360
30	6,090	2,410	2,830	1,060		5,460	8,490	7,480	4,860	2,350	1,920	1,490
31	6,060		2,400	1,040		75,800		8,110		2,310	2,050	

Month	Observed					Adjusted for change in reservoir contents**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	78,608	7,160	828	2,536		2,270	0.738	0.85
November	161,710	10,700	2,410	5,390		5,412	1.76	1.96
December	111,310	9,350	2,260	3,591		3,568	1.16	1.34
Calendar year 1939	1,803,583	33,200	428	4,941		4,838	1.57	21.31
January	47,450	2,460	1,040	1,531		1,504	.489	.56
February	43,520	2,200	980	1,501		1,596	.519	.56
March	190,030	75,800	1,600	6,130		7,373	2.40	2.77
April	822,090	86,900	8,490	27,400		28,961	9.42	10.51
May	204,830	9,510	3,790	6,607		6,696	2.18	2.51
June	125,620	9,720	1,380	4,187		3,982	1.29	1.44
July	77,430	5,920	1,490	2,498		2,061	.670	.77
August	47,535	2,310	652	1,533		793	.258	.30
September	98,800	17,300	1,320	3,293		3,549	1.15	1.28
Water year 1939-40	2,008,933	86,900	652	5,489		5,617	1.83	24.85

**Adjusted for change in contents in Lake Wallenpaupack and Toronto, Cliff Lake, and Swinging Bridge Reservoirs.

Note.- Stage-discharge relation affected by ice Dec. 26-28, Dec. 31 to Jan. 14, Jan. 17 to Mar. 28.

Delaware River at Belvidere, N. J.

Location.- Water-stage recorder, lat. 40°49'36", long. 75°05'02", at Belvidere, Warren County, just downstream from Pequest River. Datum of gage is 226.43 feet above mean sea level (general adjustment of 1929).

Drainage area.- 4,542 square miles.

Records available.- October 1922 to September 1940.

Average discharge.- 18 years, 8,033 second-feet (adjusted).

Extremes.- Maximum discharge during year, 139,000 second-feet Apr. 1 (gage height, 21.40 feet); minimum, 1,090 second-feet Oct. 21 (gage height, 2.69 feet).
1922-40: Maximum discharge, 179,000 second-feet Mar. 19,1936 (gage height, 25.0 feet); minimum, 804 second-feet July 25, Sept. 19, 1939 (gage height, 2.32 feet).
Maximum stage known, 28.6 feet, from floodmark, Oct. 10, 1903 (discharge, 220,000 second-feet, from rating curve extended above 170,000 second-feet).

Remarks.- Records excellent except those for periods of ice effect, which are good. Flow regulated by storage in Lake Wallenpaupack and in Toronto, Cliff Lake, and Swinging Bridge Reservoirs on Mongaup River, which have a combined capacity of 12,300,000,000 cubic feet.

Cooperation.- Records furnished by U. S. Geological Survey, Trenton, N. J.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,340	8,270	2,630	b3,300	b2,300	2,630	129,000	12,300	14,600	7,030	3,040	18,300
2	2,440	12,800	2,540	b2,700	b2,300	2,630	73,400	12,800	15,600	7,200	2,730	31,000
3	3,470	10,800	2,730	b2,700	b2,200	2,630	45,800	14,100	15,600	7,550	2,440	19,600
4	3,940	8,270	2,830	b2,700	b2,200	4,230	41,800	13,700	13,200	6,210	2,140	12,800
5	4,190	6,860	3,580	b2,600	b2,200	4,720	48,200	12,300	11,500	5,440	1,520	8,830
6	3,470	7,730	4,320	b2,500	2,160	4,720	49,000	10,800	10,200	4,720	1,640	7,030
7	3,040	8,830	3,820	b2,700	2,250	5,140	40,200	10,200	9,220	4,190	2,440	5,590
8	2,540	8,090	3,470	2,630	2,440	5,290	39,400	9,220	7,910	3,820	2,540	4,450
9	2,340	8,090	3,250	2,250	2,210	5,000	78,700	8,640	7,030	3,700	2,340	4,450
10	2,340	8,460	3,140	b2,200	2,340	4,720	77,000	8,270	7,030	3,700	2,250	4,190
11	2,340	7,730	3,040	b2,200	2,830	4,060	47,400	7,550	7,550	3,580	2,230	4,190
12	2,120	6,860	3,580	2,180	2,940	3,940	38,700	6,530	7,200	3,940	1,450	3,940
13	2,070	7,380	3,360	2,440	2,830	3,940	45,800	6,060	6,700	4,720	1,420	3,700
14	1,680	7,030	3,250	2,630	3,040	4,590	38,700	6,060	6,370	4,320	2,140	3,360
15	1,450	6,210	3,140	5,350	3,250	18,600	28,400	6,060	5,440	3,700	2,160	2,940
16	1,580	5,590	2,830	5,440	3,700	14,100	24,800	6,060	4,860	3,360	2,020	2,630
17	1,360	5,000	2,730	5,000	3,250	12,800	21,800	10,800	4,450	3,140	1,980	2,630
18	1,950	5,000	2,830	b4,200	3,040	12,800	20,100	14,100	4,580	2,940	2,110	2,730
19	1,980	4,720	3,140	b3,700	2,830	13,200	22,400	12,300	4,450	2,940	1,790	2,440
20	1,480	4,190	3,580	b3,500	3,250	14,100	27,200	10,000	4,320	3,040	1,470	2,540
21	1,170	4,320	6,740	b3,200	3,250	16,100	40,200	11,900	3,700	2,540	2,040	2,540
22	1,890	4,320	13,700	b3,200	3,250	16,600	51,700	13,200	3,580	2,340	1,850	2,440
23	1,980	3,820	10,800	b3,200	3,140	13,700	39,400	12,800	3,140	2,250	1,790	2,180
24	3,040	3,360	7,910	b3,200	3,040	11,500	29,600	12,300	3,040	2,830	1,900	2,090
25	2,940	3,250	6,060	b3,100	2,940	9,600	24,200	11,500	4,460	3,040	1,680	2,630
26	2,730	3,250	b5,500	b2,900	2,730	8,640	20,600	11,200	6,700	2,940	1,330	3,250
27	2,540	3,250	4,860	b2,500	2,630	8,270	17,600	12,300	6,530	2,630	1,320	2,940
28	3,620	2,940	b4,000	b2,600	2,630	9,020	15,100	13,700	5,590	2,440	3,010	2,730
29	6,530	3,040	3,700	b2,400	2,830	10,200	13,700	13,200	5,740	2,440	3,940	2,540
30	7,730	2,730	3,360	b2,300		10,200	12,800	12,300	8,090	2,360	3,580	2,340
31	6,860		b3,500	b2,300		65,600		11,900		3,140	4,130	

Month	Observed					Adjusted for change in contents**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	89,150	7,730	1,170	2,876		2,610	0.575	0.66
November	182,190	12,800	2,730	6,073		6,095	1.34	1.50
December	133,920	13,700	2,540	4,320		4,297	.946	1.09
Calendar year 1939	2,479,934	39,700	838	6,794		6,691	1.47	20.00
January	93,820	5,440	2,180	3,026		2,999	.660	.76
February	80,000	3,700	2,160	2,759		2,853	.628	.68
March	323,270	65,600	2,630	10,430		11,670	2.57	2.96
April	1,202,700	129,000	12,800	40,090		41,650	9.17	10.23
May	334,150	14,100	6,060	10,780		10,870	2.39	2.76
June	218,380	15,600	3,040	7,279		7,074	1.56	1.74
July	118,190	7,550	2,250	3,813		3,376	.743	.86
August	68,420	4,130	1,320	2,207		1,467	.323	.37
September	173,020	31,000	2,090	5,767		6,023	1.33	1.48
Water year 1939-40	3,017,210	129,000	1,170	8,244		8,371	1.84	25.09

Peak discharge.- Apr. 1 (9 to 11 a.m.) 139,000 sec.-ft.; Apr. 9 (9 to 10 p.m.) 96,000 sec.-ft.
** Adjusted for change in contents in Lake Wallenpaupack and in Toronto, Cliff Lake, and Swinging Bridge Reservoirs.
b Stage-discharge relation affected by ice.

Delaware River at Riegelsville, N. J.

Location.- Water-stage recorder, lat. 40°35'36", long. 75°11'17", at suspension bridge at Riegelsville, Warren County, 600 feet upstream from Musconetcong River, flow of which is included in records after Oct. 1, 1931. Datum of gage is 125.12 feet above mean sea level (general adjustment of 1929).

Drainage area.- 6,344 square miles (including that of Musconetcong River).

Records available.- July 1906 to September 1940.

Average discharge.- 34 years, 11,010 second-feet (including flow of Musconetcong River after Oct. 1, 1931), adjusted for diversion and storage.

Extremes.- Maximum discharge during year, 154,000 second-feet Apr. 1 (gage height, 26.47 feet); minimum, not including flow in Delaware Division Canal, 1,700 second-feet Oct. 22 (gage height, 2.13 feet).
1906-40: Maximum discharge, 210,000 second-feet Mar. 19, 1936 (gage height, 32.45 feet), by slope-area method; minimum, not including flow in canal, 870 second-feet Sept. 20, 1908 (gage height, 1.55 feet).
Maximum stage known, 35.9 feet, from floodmarks, Oct. 10, 1903 (discharge, about 275,000 second-feet).

Remarks.- Records good. Water diverted to Delaware Division Canal for navigation. Flow regulated by Lake Wallenpaupack, 3 reservoirs on Mongaup River, and Lake Hopatcong, which have a combined capacity of 13,100,000,000 cubic feet.

Cooperation.- Records furnished by U. S. Geological Survey, Trenton, N. J.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,020	9,500	3,610	4,580	3,200	4,020	147,000	17,300	20,900	10,200	4,430	31,600
2	3,880	14,800	3,610	3,610	3,150	3,740	94,800	17,300	24,200	9,150	4,290	43,900
3	4,720	13,200	3,610	3,740	2,930	4,140	59,500	18,600	22,800	9,850	3,740	29,700
4	5,610	10,200	4,150	3,880	2,960	17,300	54,900	18,600	19,500	8,810	3,480	19,000
5	5,610	8,640	4,150	3,740	3,000	13,400	58,800	16,900	16,900	7,810	2,770	13,600
6	5,160	9,150	5,610	3,300	2,910	9,500	60,100	15,200	14,800	6,850	2,450	10,600
7	4,290	10,600	5,160	3,880	2,980	8,810	50,500	14,000	13,200	6,230	3,480	8,470
8	3,880	9,850	4,720	3,880	3,180	8,140	48,100	12,800	11,300	5,610	3,610	7,330
9	3,250	9,500	4,290	3,350	3,050	7,650	85,700	12,000	11,300	5,310	3,350	7,010
10	3,000	9,500	4,150	3,200	3,180	7,170	94,100	11,300	12,800	5,610	3,280	7,010
11	3,480	9,150	4,150	3,220	5,610	6,230	62,100	10,600	12,400	5,310	3,300	7,010
12	3,000	8,140	4,430	3,150	5,160	5,610	50,500	9,500	11,300	5,920	2,630	6,540
13	3,030	8,640	4,720	3,350	4,290	5,920	56,800	8,810	10,600	6,540	2,330	6,080
14	2,520	8,300	4,430	3,740	4,290	7,390	52,400	8,810	9,500	6,700	2,980	5,610
15	2,330	7,650	4,150	8,560	4,020	53,100	39,900	8,470	8,470	5,760	3,100	5,160
16	2,300	7,010	4,020	8,300	4,430	25,700	33,900	8,810	a7,800	5,160	2,980	4,580
17	2,080	6,380	3,740	6,700	4,430	19,500	30,200	13,200	a7,000	4,860	2,980	4,290
18	2,450	6,230	3,740	5,920	4,430	19,000	27,200	17,700	7,170	4,720	3,050	4,430
19	2,700	5,920	4,150	b5,000	4,430	20,000	29,200	16,000	7,330	4,430	2,810	4,150
20	2,370	5,460	4,720	b4,500	5,460	21,900	36,600	13,600	7,170	4,580	2,370	4,020
21	1,910	5,310	8,450	4,430	5,920	23,300	51,800	16,400	6,700	4,290	2,810	4,150
22	2,100	5,610	16,000	4,290	5,310	23,700	64,200	17,700	6,080	3,740	2,740	4,020
23	3,220	5,310	13,600	4,580	5,010	20,000	53,600	16,900	5,610	3,610	2,630	3,740
24	4,020	4,430	9,850	4,430	4,580	16,000	42,200	16,400	5,610	4,150	2,650	3,350
25	4,150	4,150	7,810	4,430	4,430	14,000	34,400	15,200	6,230	5,010	2,630	4,860
26	3,740	4,150	7,170	4,020	4,020	12,400	29,500	16,000	8,640	5,310	2,500	6,230
27	3,480	4,290	6,230	3,610	3,740	11,700	25,700	18,200	9,150	4,860	2,540	5,310
28	4,150	3,880	5,610	3,740	3,610	12,800	21,900	20,500	8,300	4,430	4,150	4,720
29	7,010	4,020	5,460	3,610	3,880	15,200	19,500	18,600	8,300	4,020	6,080	4,430
30	9,150	3,880	4,860	3,350		14,800	18,200	17,300	10,200	3,740	5,610	4,020
31	8,470		5,010	3,150		75,900		17,300		4,720	5,010	

Month	Observed					Adjusted for diversion and change in contents**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	121,080	9,150	1,910	3,906		3,639	0.574	0.66
November	222,850	14,800	3,880	7,428		7,482	1.18	1.32
December	175,360	16,000	3,610	5,657		5,622	.886	1.02
Calendar year 1939	3,592,340	49,300	1,380	9,842		9,765	1.54	20.89
January	133,240	8,560	3,150	4,298		4,281	.675	.78
February	117,590	5,920	2,910	4,055		4,164	.656	.71
March	508,020	75,900	3,740	16,390		17,730	2.79	3.22
April	1,533,300	147,000	18,200	51,110		52,770	8.32	9.28
May	460,000	20,500	8,470	14,840		14,930	2.35	2.71
June	331,260	24,200	5,610	11,040		10,830	1.71	1.91
July	177,290	10,200	3,610	5,719		5,273	.831	.96
August	102,760	6,080	2,330	3,315		2,607	.411	.47
September	274,920	43,900	3,350	9,164		9,476	1.49	1.66
Water year 1939-40	4,157,670	147,000	1,910	11,360		11,510	1.81	24.70

Peak discharge.- Mar. 15 (9:30 a.m.) 71,100 sec.-ft.; Apr. 1 (12 m.) 154,000 sec.-ft.; Apr. 10 (12:30 a.m.) 109,000 sec.-ft.
a No gage-height record; discharge estimated.
b Stage-discharge relation affected by ice.
** Adjusted for diversion to Delaware Division Canal and change in contents in Lake Wallenpaupack, three reservoirs on Mongaup River, and Lake Hopatcong.

Delaware River at Trenton, N. J.

Location.- Water-stage recorder, lat. 40°13'18", long. 74°46'38", 200 feet upstream from Calhoun Street Bridge in Trenton, Mercer County, and half a mile upstream from Assunpink Creek. Datum of gage is 7.77 feet above mean sea level (general adjustment of 1929).

Drainage area.- 6,796 square miles.

Records available.- February 1913 to September 1940.

Average discharge.- 27 years, 11,630 second-feet (adjusted).

Extremes.- Maximum discharge during year, 148,000 second-feet Apr. 1 (gage height, 12.85 feet); minimum, 1,820 second-feet Oct. 23 (gage height, -0.09 foot). Flow in Delaware & Raritan Canal not included.
1913-40: Maximum discharge, 227,000 second-feet Mar. 19, 1936 (gage height, 16.66 feet); minimum, 1,220 second-feet Sept. 18, 1932. Flow in canal not included.
Maximum stage known, 22.8 feet, from floodmark, Mar. 8, 1904 (caused by ice jam).

Remarks.- Records good. Some water diverted to Delaware & Raritan Canal. Flow regulated by Lake Wallenpaupack, 3 reservoirs on Mongaup River, and Lake Hopatcong, which have a combined capacity of 13,100,000,000 cubic feet.

Cooperation.- Records furnished by U. S. Geological Survey, Trenton, N. J.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,380	9,150	3,640	5,000	3,400	4,360	141,000	17,100	19,500	10,700	4,360	19,400
2	4,150	12,200	3,580	3,900	3,400	4,180	104,000	16,700	26,600	8,860	4,110	40,800
3	4,360	14,200	3,610	4,000	3,200	4,490	60,900	17,900	23,900	9,460	3,840	32,900
4	5,260	11,300	3,870	4,100	3,200	23,900	53,200	18,700	21,200	9,150	3,450	21,200
5	5,460	9,770	4,080	4,000	3,200	23,200	54,500	17,100	17,900	8,000	3,220	14,600
6	5,460	9,770	4,890	3,800	3,100	12,500	59,600	15,600	15,600	6,970	2,610	11,300
7	4,710	10,400	5,260	4,000	3,200	10,400	49,600	13,800	13,800	6,280	2,700	9,150
8	4,080	10,400	4,890	4,100	3,300	9,460	49,600	12,800	12,200	5,650	3,450	7,740
9	3,680	9,460	4,360	3,700	3,300	8,860	78,500	12,200	11,000	5,080	3,580	6,740
10	3,320	9,460	4,180	3,400	3,500	8,280	96,500	11,600	12,200	5,080	3,320	6,740
11	3,130	9,770	4,180	3,400	5,600	6,970	64,800	11,000	12,200	5,080	3,130	6,500
12	3,380	8,560	4,110	3,400	5,800	6,280	50,800	10,100	11,900	5,260	3,160	6,500
13	3,070	8,000	4,710	3,600	4,700	6,060	54,500	9,150	11,000	5,650	2,580	6,060
14	2,970	8,560	4,530	4,000	4,600	6,740	53,200	8,560	10,400	6,280	2,360	5,650
15	2,440	7,740	4,360	8,600	4,300	54,600	41,900	8,560	9,150	5,650	2,940	5,080
16	2,330	7,220	4,180	9,000	4,700	32,400	34,500	8,860	8,280	5,080	2,970	4,710
17	2,360	6,500	3,910	7,400	4,700	20,800	30,500	11,000	7,470	4,710	2,910	4,360
18	2,090	6,060	3,810	6,400	4,700	19,500	27,500	17,100	6,740	4,360	2,940	4,150
19	2,440	5,860	3,940	5,400	4,700	19,900	27,500	16,300	6,970	4,110	3,070	4,180
20	2,730	5,460	4,360	4,800	5,600	22,100	39,700	14,200	6,740	4,080	2,760	3,910
21	2,330	5,260	7,220	4,700	6,300	23,000	49,600	21,200	6,280	4,110	2,330	3,910
22	2,020	5,460	12,800	4,600	5,800	23,900	63,500	19,100	5,650	3,610	2,760	3,870
23	2,350	5,260	14,900	4,800	5,400	21,200	54,500	17,500	5,260	3,380	2,670	3,740
24	3,190	4,710	11,300	4,900	5,000	16,700	45,000	16,700	5,080	3,290	2,520	3,540
25	4,040	4,180	8,600	4,800	4,700	14,900	35,500	15,600	5,460	4,010	2,580	4,200
26	3,910	4,110	7,800	4,300	4,300	12,800	30,500	15,600	7,220	5,080	2,760	6,740
27	3,610	4,110	6,800	4,000	4,000	11,900	25,700	17,500	9,150	4,530	2,550	6,060
28	3,540	4,080	6,000	3,900	4,000	11,900	22,100	20,300	8,560	4,360	3,070	4,890
29	4,770	3,810	5,800	4,000	4,180	14,600	19,900	19,500	8,280	3,810	5,200	4,530
30	8,280	3,910	5,400	3,600		14,600	18,300	17,500	8,860	3,680	5,860	4,110
31	9,150		5,300	3,400		49,800		18,700		3,910	5,080	

Month	Observed					Adjusted for diversion and change in contents**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	117,990	9,150	2,020	3,806		3,569	0.525	0.61
November	224,730	14,200	3,810	7,491		7,598	1.12	1.25
December	176,370	14,900	3,580	5,689		5,690	.837	.96
Calendar year 1939	3,767,110	54,500	1,480	10,320		10,270	1.51	20.51
January	143,000	9,000	3,400	4,613		4,596	.676	.78
February	125,880	6,300	3,100	4,341		4,486	.660	.71
March	520,280	54,600	4,180	16,780		18,210	2.68	3.09
April	1,534,900	141,000	18,300	51,160		52,940	7.79	8.69
May	467,530	21,200	8,560	15,080		15,280	2.25	2.59
June	334,550	26,600	5,080	11,150		11,050	1.63	1.82
July	169,260	10,700	3,290	5,460		5,094	.750	.86
August	100,840	5,860	2,330	3,253		2,563	.377	.43
September	267,260	40,800	3,540	8,909		9,220	1.36	1.52
Water year 1939-40	4,182,590	141,000	2,020	11,430		11,640	1.71	23.31

Peak discharge.- Mar. 15 (3 p.m.) 74,200 sec.-ft.; Apr. 1 (4 p.m.) 148,000 sec.-ft.; Apr. 10 (5:30 a.m.) 104,000 sec.-ft.
Note.- Stage-discharge relation affected by ice Dec. 25 to Feb. 28.
** Adjusted for diversion to Delaware & Raritan Canal and change in contents in Lake Wallenpaupack, three reservoirs on Mongaup River, and Lake Hopatcong.

Lackawaxen River at Hawley, Pa.

Location.- Water-stage recorder, lat. 41°28'30", long. 75°10'05", at Hawley, Wayne County, 300 feet downstream from Wallenpaupack Creek and 1,000 feet downstream from highway bridge and site of former gaging station. Datum of gage is 868.74 feet above mean sea level (unadjusted).

Drainage area.- 290 square miles (does not include Lake Wallenpaupack drainage area of 228 square miles; flow from which is diverted to hydroelectric plant downstream).

Records available.- August 1938 to September 1940 in reports of U. S. Geological Survey; July 1908 to December 1919, August 1938 to September 1940 in reports of Pennsylvania Department of Forests and Waters

Average discharge.- 10 years (1909-12, 1913-18, 1938-40), 424 second-feet.

Extremes.- Maximum discharge during year, 21,400 second-feet Mar. 31 (gage height, 9.68 feet), from rating curve extended above 6,000 second-feet; minimum, 34 second-feet Oct. 19 (gage height, 1.35 feet); minimum daily, 46 second-feet Aug. 25.
1908-19, 1938-40: Maximum discharge, that of Mar. 31, 1940; minimum daily, 7 second-feet Aug. 20, 1911.
Maximum stage known, about 13.9 feet, from floodmarks, Mar. 18, 1936 (discharge not determined).

Remarks.- Records good except those for extremely high stages, which are fair, and those for period of ice effect, which are poor. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	550	1,550	131	150	105	125	11,000	460	632	654	121	4,790
2	307	912	122	140	100	120	4,100	514	1,330	494	103	2,010
3	344	618	202	130	100	120	3,470	514	820	368	92	942
4	501	485	257	120	100	130	5,410	563	591	320	86	622
5	312	454	211	110	100	160	5,750	500	460	268	82	447
6	235	618	178	105	105	150	3,540	402	368	219	77	341
7	214	706	166	100	*110	140	3,250	363	298	181	79	278
8	174	676	166	96	115	135	4,660	320	247	159	79	233
9	159	604	148	93	120	130	7,510	357	237	144	72	210
10	152	473	159	*90	140	125	3,210	325	309	147	70	210
11	131	425	193	90	220	115	2,050	278	268	135	67	247
12	110	379	167	91	330	110	2,110	257	228	423	64	214
13	102	341	178	94	450	110	1,990	242	201	466	64	189
14	103	305	156	100	350	110	1,430	233	166	273	68	185
15	81	262	183	500	290	200	1,160	228	153	196	67	163
16	81	253	146	450	250	180	1,060	252	170	166	62	149
17	74	248	148	350	220	180	916	396	150	144	60	150
18	68	226	178	280	210	210	1,180	309	132	163	60	138
19	52	222	185	230	210	350	1,230	262	129	159	62	138
20	65	209	562	200	230	900	2,250	241	121	129	68	126
21	75	189	1,390	180	200	1,600	3,950	606	108	116	60	124
22	389	178	706	170	*180	1,240	2,930	421	97	108	54	156
23	314	166	499	160	160	964	1,750	357	95	103	52	138
24	235	166	364	150	150	787	1,280	357	290	101	49	116
25	186	148	320	140	145	724	1,060	330	940	106	46	158
26	305	142	280	135	140	619	892	629	514	116	62	262
27	382	145	240	130	135	563	752	940	415	224	88	190
28	1,460	138	200	125	135	507	647	731	304	159	261	141
29	982	135	180	120	130	647	577	570	1,040	144	444	124
30	611	132	170	115		4,190	507	473	605	138	226	108
31	749		160	110		18,000		453		153	926	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,503	1,460	52	307	1.06	1.22
November	11,505	1,550	132	384	1.32	1.48
December	8,345	1,390	122	269	.928	1.07
Calendar year 1939	155,461	4,160	29	426	1.47	19.92
January	5,054	500	90	163	.562	.65
February	5,230	450	100	180	.621	.67
March	33,641	18,000	110	1,085	3.74	4.31
April	81,621	11,000	507	2,721	9.38	10.47
May	12,883	940	228	416	1.43	1.65
June	11,418	1,330	95	381	1.31	1.46
July	6,676	654	101	215	.741	.86
August	3,771	926	46	122	.421	.48
September	13,299	4,790	108	443	1.53	1.71
Water year 1939-40	202,946	18,000	46	554	1.91	26.03

Peak discharge.- Mar. 31 (10:30 p.m.) 21,400 sec.-ft; Apr. 5 (2 a.m.) 7,720 sec.-ft.; Apr. 9 (4 a.m.) 10,400 sec.-ft.; Sept. 1 (2 p.m.) 6,150 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 21.

Wallenpaupack Creek at Wilsonville, Pa.

Location (revised).- At lower end of penstock of hydroelectric plant of Pennsylvania Power & Light Co. at Kimble, 3 miles east of dam that is at lat. 41°27'35", long. 75°11'10", at Wilsonville, 1¼ miles south of Hawley, Wayne County.

Drainage area.- 228 square miles.

Records available.- October 1918 to September 1921, June 1926 to September 1940 in reports of U. S. Geological Survey; July 1908 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 24 years (1913-22, 1925-40), 373 second-feet (adjusted).

Remarks.- Records good. Figures of daily discharge computed from records of output of generators and represent flow through hydroelectric plant. No discharge over spillway during year. Flow regulated by storage in Lake Wallenpaupack (capacity, 215,500 acre-feet).

Cooperation.- Records of hourly load, operation of power plant, and water-surface elevations in lake and tailrace furnished by Pennsylvania Power & Light Co. in connection with a Federal Power Commission project.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	63	86	304	117	57	658	457	234	68	653	0
2	157	152	116	87	108	6.3	481	536	0	57	717	0
3	69	169	0	103	72	0	565	530	604	3.5	0	555
4	480	46	34	92	0	140	338	70	459	0	157	160
5	398	0	57	545	77	0	494	0	603	0	859	196
6	575	96	66	313	44	0	147	523	649	4.9	1,000	180
7	214	42	56	18	0	0	6.0	559	523	0	824	2.0
8	90	89	86	246	0	19	916	435	0	408	803	69
9	627	194	81	38	0	0	992	380	11	514	795	361
10	309	160	0	45	0	0	1,000	341	683	402	296	342
11	442	54	506	59	0	71	998	44	684	498	0	211
12	129	0	57	123	0	53	994	0	567	545	850	259
13	136	209	118	0	0	29	165	527	651	0	848	251
14	284	200	138	0	49	66	8.5	575	546	25	815	19
15	37	104	111	78	13	0	1,030	528	3.3	154	789	111
16	651	96	72	80	17	0	1,050	865	0	207	972	321
17	678	140	0	63	0	0	1,010	330	621	420	633	255
18	277	0	118	81	0	0	527	56	575	479	157	352
19	41	0	75	124	0	0	937	0	581	544	823	388
20	526	508	284	117	10	0	249	551	342	104	710	403
21	141	439	301	0	17	0	210	366	238	0	720	292
22	195	118	358	118	0	0	1,200	379	0	852	717	86
23	309	0	188	286	25	45	1,700	346	0	856	708	315
24	231	155	0	175	0	0	1,700	188	458	858	141	372
25	332	315	0	177	0	48	1,030	0	342	626	11	220
26	60	0	246	175	57	163	843	0	462	594	710	70
27	74	356	500	177	105	18	106	557	422	359	842	50
28	54	280	174	0	21	95	0	675	318	0	835	55
29	0	77	364	174	13	0	595	1,210	0	935	356	0
30	354	69	160	174		12	538	150	0	911	782	874
31	305		32	178		0		1,170		859	15	

Month	Observed					Adjusted for change in reservoir contents**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	8,175	678	0	264		36	0.158	0.18
November	4,131	508	0	138		154	.675	.76
December	4,384	506	0	141		137	.601	.69
Calendar year 1939	123,809.2	1,060	0	339		247	1.08	14.68
January	4,150	545	0	134		130	.570	.66
February	745	117	0	25.7		134	.588	.64
March	822.3	163	0	26.5		964	4.23	4.87
April	20,487.5	1,700	0	683		1,850	8.11	9.05
May	12,348	1,210	0	398		426	1.87	2.15
June	10,576.3	684	0	353		252	1.11	1.23
July	11,283.4	935	0	364		116	.509	.59
August	18,538	1,000	0	598		15.6	.068	.08
September	6,769.0	874	0	226		453	1.99	2.22
Water year 1939-40	102,409.5	1,700	0	280		387	1.70	23.12

** Adjusted for change in contents in Lake Wallenpaupack, but not for evaporation or seepage.

Bushkill Creek at Shoemakers, Pa.

Location.- Water-stage recorder, lat. 41°05'15", long. 75°02'20", at highway bridge three-quarters of a mile northwest of Shoemakers, Monroe County, and 2 miles southwest of Bushkill. Datum of gage is 421.13 feet above mean sea level (unadjusted).

Drainage area.- 117 square miles.

Records available.- October 1918 to September 1920, October 1931 to September 1940 in reports of U. S. Geological Survey; September 1908 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 28 years (1908-16, 1920-40), 235 second-feet.

Extremes.- Maximum discharge during year, 2,430 second-feet Mar. 31, Apr. 1 (gage height, 5.22 feet); minimum, 12 second-feet Oct. 21 (gage height, 1.06 feet).
1908-40: Maximum discharge, 3,910 second-feet July 24, 1920 (gage height, 7.2 feet, from graph based on gage readings), from rating curve extended above 1,600 second-feet; minimum, 4 second-feet Sept. 21, 26, 1932 (gage height, 0.90 foot).

Remarks.- Records good except those for periods of backwater from aquatic vegetation and leaves and for period of no gage-height record, which are fair, and those for periods of ice effect, which are poor. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	114	29	58	60	49	2,080	325	400	197	47	2,040
2	26	87	31	56	57	49	1,540	345	465	166	42	1,670
3	29	69	39	54	54	49	1,300	350	406	149	38	1,110
4	32	59	44	52	54	52	1,380	341	354	154	35	788
5	28	70	43	50	56	60	1,300	313	329	141	34	578
6	24	146	40	48	58	56	1,080	283	298	124	31	421
7	22	122	39	47	*62	53	935	261	265	112	34	337
8	19	105	39	47	60	51	1,030	234	244	100	35	279
9	19	96	35	*46	60	49	1,580	234	244	94	31	290
10	17	85	36	46	62	48	1,260	228	376	92	29	279
11	16	81	40	46	80	47	1,020	203	345	86	27	265
12	16	73	36	47	110	46	1,040	191	305	112	25	228
13	14	68	37	49	150	45	1,040	183	265	124	25	197
14	14	62	39	55	120	46	879	177	228	100	28	180
15	13	56	37	500	90	65	760	174	206	88	26	160
16	13	53	35	400	75	60	688	212	197	80	23	146
17	13	51	35	320	66	64	610	494	177	76	21	134
18	13	48	36	260	60	120	591	426	166	72	21	121
19	13	47	38	210	64	530	552	368	163	67	23	114
20	13	44	79	180	68	746	802	350	a170	61	23	112
21	15	43	185	160	*64	850	1,030	483	a150	59	20	103
22	58	40	149	140	62	779	1,010	416	a140	56	17	96
23	46	39	121	130	60	633	851	400	a130	54	17	88
24	32	37	110	120	58	546	734	416	a140	59	20	84
25	26	36	100	110	56	492	636	411	a220	116	18	105
26	24	35	90	100	54	440	552	454	a180	78	28	141
27	24	36	80	92	52	416	483	437	171	67	36	116
28	40	32	70	84	51	580	416	411	152	59	169	105
29	41	31	66	77	50	603	376	372	312	57	158	94
30	34	31	64	70		819	345	337	248	56	124	92
31	59		62	64		2,340		372		54	469	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	777	59	13	25.1	0.215	0.25
November	1,896	146	31	63.2	.540	.60
December	1,884	185	29	60.8	.520	.60
Calendar year 1939	62,295.2	940	7.7	171	1.46	19.79
January	3,718	500	46	120	1.03	1.18
February	1,973	150	50	68.0	.581	.63
March	10,783	2,340	45	348	2.97	3.43
April	27,900	2,080	345	930	7.95	8.87
May	10,201	494	174	329	2.81	3.24
June	7,446	465	130	248	2.12	2.37
July	2,910	197	54	93.9	.803	.92
August	1,674	469	17	54.0	.462	.53
September	10,473	2,040	84	349	2.98	3.33
Water year 1939-40	81,635	2,340	13	223	1.91	25.95

Peak discharge.- Mar. 31 (8:20 a.m.) 2,430 sec.-ft.; Apr. 1 (1 a.m.) 2,430 sec.-ft.; Apr. 9 (7 a.m.) 1,710 sec.-ft.; Apr. 22 (1 a.m.) 1,080 sec.-ft.; Sept. 1 (8 p.m.) 2,340 sec.-ft.
*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for nearby stations.
Note.- Discharge for periods of backwater from aquatic vegetation and leaves, Oct. 1 to Dec. 11, Dec. 20-23, computed on basis of two discharge measurements, gage heights, and records for nearby stations. Stage-discharge relation affected by ice Dec. 12-19, Dec. 24 to Mar. 19.

Lehigh River at Tannery, Pa.

Location.- Water-stage recorder, lat. 41°02'25", long. 75°45'50", 600 feet upstream from highway bridge at Tannery, Carbon County, and 1¼ miles upstream from Black Creek. Datum of gage is 1,041.80 feet above mean sea level (general adjustment of 1929).

Drainage area.- 322 square miles.

Records available.- October 1919 to September 1921, October 1928 to September 1940 in reports of U. S. Geological Survey; June 1914 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 21 years (1914-15, 1919-26, 1927-40), 668 second-feet.

Extremes.- Maximum discharge during year, 12,100 second-feet Mar. 31 (gage height, 10.64 feet); minimum, 34 second-feet Oct. 19 (gage height, 1.20 feet); minimum daily, 85 second-feet Nov. 27.
1914-40: Maximum discharge, 21,800 second-feet Mar. 12, 1936 (gage height, 13.34 feet); minimum, 0.9 second-foot Sept. 28, 1936 (gage height, 1.07 feet); minimum daily, 7.2 second-feet Aug. 5, 1936.

Remarks.- Records good except those for period of ice effect, which are fair. Regulation from operation of power plants upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	318	772	103	200	160	170	6,360	802	946	579	176	4,870
2	308	544	127	190	150	160	4,320	878	1,190	445	141	2,900
3	432	404	233	190	150	170	3,700	904	1,020	370	136	1,660
4	309	328	263	190	150	260	4,590	904	836	339	130	1,120
5	218	299	218	190	160	350	4,870	836	685	313	127	802
6	172	318	189	180	160	310	3,250	734	579	269	130	587
7	147	309	175	170	180	270	2,700	645	503	245	200	465
8	138	328	165	170	170	260	3,060	565	445	218	164	393
9	127	271	127	160	*160	260	5,430	601	493	209	143	607
10	112	263	165	160	170	250	3,560	572	1,400	213	127	701
11	116	250	189	*150	320	230	2,490	510	1,140	205	117	742
12	111	250	167	150	300	220	2,540	471	852	248	112	594
13	91	229	156	160	270	220	2,700	445	661	360	109	490
14	90	210	162	190	230	240	2,110	439	524	293	136	427
15	92	185	160	700	180	800	1,800	422	445	231	120	370
16	96	196	150	500	160	1,020	1,660	433	404	200	112	339
17	99	185	147	350	160	938	1,490	616	370	183	109	303
18	96	156	175	290	170	861	1,530	645	344	176	112	283
19	92	150	182	260	210	972	1,490	558	339	160	129	264
20	88	144	460	240	240	1,150	2,230	484	344	157	123	255
21	86	138	938	230	260	1,320	2,920	616	303	149	168	250
22	296	135	610	220	*260	1,210	2,590	623	278	146	160	313
23	285	132	450	210	230	1,050	2,060	551	264	146	157	250
24	210	130	380	210	200	954	1,840	517	349	180	157	236
25	168	127	420	200	190	852	1,580	587	477	264	136	336
26	162	101	320	190	190	752	1,360	1,290	452	185	182	551
27	174	85	250	180	170	655	1,200	1,580	398	183	200	445
28	258	122	210	170	160	988	1,060	1,250	344	197	495	360
29	331	106	220	170	170	1,100	954	1,060	766	191	484	308
30	254	108	230	170		3,320	861	895	734	179	393	273
31	326		220	160		9,700		861		200	1,550	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,802	432	86	187	0.581	0.67
November	6,975	772	85	232	.720	.81
December	7,961	938	103	257	.798	.92
Calendar year 1939	177,748	3,170	73	487	1.51	20.53
January	6,900	700	150	223	.693	.80
February	5,670	320	150	196	.609	.65
March	31,012	9,700	160	1,000	3.11	3.58
April	78,305	6,360	861	2,610	8.11	9.04
May	22,294	1,580	422	719	2.23	2.57
June	17,885	1,400	264	596	1.85	2.07
July	7,433	579	146	240	.745	.86
August	6,735	1,550	109	217	.674	.78
September	21,494	4,870	236	716	2.22	2.48
Water year 1939-40	218,466	9,700	85	597	1.85	25.23

Peak discharge.- Mar. 31 (2:30 a.m.) 12,100 sec.-ft.; Apr. 5 (2 a.m.) 5,430 sec.-ft.; Apr. 9 (7 a.m.) 5,850 sec. ft.; Sept. 1 (6 p.m.) 5,570 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 15.

Lehigh River at Bethlehem, Pa.

Location.- Water-stage recorder, lat. 40°37'05", long. 75°21'55", 1,650 feet upstream from Minsi Trail Bridge, at Bethlehem, Northampton County, and 2,400 feet downstream from Monocacy Creek. Datum of gage is 208.60 feet above mean sea level (general adjustment of 1929).
Drainage area.- 1,280 square miles.
Records available.- September 1902 to February 1905, April 1909 to December 1913, October 1918 to September 1921, October 1928 to September 1940 in reports of U. S. Geological Survey; September 1902 to February 1905, April 1909 to September 1940 in reports of Pennsylvania Department of Forests and Waters. Records prior to October 1928 obtained at New Street Bridge, 4,130 feet upstream.
Average discharge.- 11 years (1929-40), 2,229 second-feet.
Extremes.- Maximum discharge during year, 35,000 second-feet Mar. 15 (gage height, 12.83 feet); minimum, 372 second-feet Dec. 9 (gage height, 2.02 feet); minimum daily, 440 second-feet Oct. 21.
1902-5, 1909-40: Maximum discharge, 64,800 second-feet Aug. 24, 1933 (gage height, 18.70 feet); minimum, 160 second-feet Oct. 15, 1910 (gage height, 1.33 feet, former site and datum).
Maximum stage known, 24.9 feet, from floodmark, former site and datum, Feb. 28, 1902 (discharge, about 85,000 second-feet).
Extremes do not include flow in Lehigh Canal.
Remarks.- Records good. Regulation from operation of power plants upstream. Daily and monthly records include flow of Lehigh Canal.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	938	1,400	540	746	685	865	18,700	2,970	3,320	1,660	743	15,600
2	925	1,490	568	695	695	794	11,900	3,070	5,140	1,440	703	9,710
3	1,040	1,200	675	725	625	1,130	9,230	3,180	4,330	1,320	664	5,570
4	1,080	1,020	809	746	675	8,260	9,930	2,860	3,620	1,350	635	3,900
5	838	986	767	736	725	5,160	10,300	2,750	3,190	1,280	642	2,800
6	702	1,020	695	709	715	3,490	8,210	2,440	2,770	1,090	672	2,130
7	625	993	645	655	725	2,640	6,600	2,290	2,460	974	702	1,790
8	569	915	606	736	736	1,960	6,710	2,110	2,220	959	702	1,560
9	558	893	568	695	695	1,780	15,200	2,070	2,250	946	689	1,690
10	548	830	578	655	771	1,670	11,300	2,090	4,200	996	613	1,870
11	521	779	675	645	1,540	1,380	7,890	2,000	3,620	960	585	1,820
12	503	749	645	655	1,360	1,280	7,730	1,960	2,980	1,160	600	1,660
13	494	799	606	685	1,060	1,430	8,890	1,900	2,660	1,200	592	1,500
14	476	776	655	807	991	2,450	7,380	1,870	2,230	1,090	620	1,360
15	449	a751	596	2,790	824	22,100	6,300	1,610	2,030	983	601	1,280
16	449	a760	596	1,930	696	6,420	5,570	1,730	1,980	883	563	1,240
17	449	a742	625	1,270	828	4,180	3,610	2,180	1,800	835	567	1,170
18	458	a723	625	1,160	890	4,310	3,390	1,980	1,680	800	567	1,120
19	479	a705	655	1,100	1,060	4,700	3,390	1,840	1,660	778	573	1,060
20	468	a682	921	1,020	1,420	5,410	6,810	1,840	1,540	716	556	1,020
21	460	a662	2,500	1,000	1,600	5,560	9,940	2,210	1,460	695	574	1,000
22	667	a642	1,990	991	1,360	4,840	9,240	2,020	1,330	721	546	1,000
23	979	a625	1,470	902	1,190	3,940	7,390	1,900	1,290	706	575	998
24	765	a603	1,240	902	1,080	3,380	6,310	1,870	1,440	824	549	969
25	666	a583	1,070	878	1,030	3,060	5,420	2,020	1,630	1,560	549	1,350
26	627	a564	1,150	828	928	2,760	4,710	3,040	1,620	1,100	705	1,680
27	629	a542	974	705	865	2,650	4,190	4,310	1,540	1,040	804	1,290
28	719	a542	830	705	806	3,650	3,720	3,940	1,440	824	1,280	1,130
29	884	531	963	736	865	3,950	3,390	3,390	1,690	800	1,350	1,020
30	867	530	1,010	736		4,660	3,070	2,970	1,870	906	1,060	971
31	927		918	705		26,600		2,970		836	2,320	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20,759	1,080	449	670	0.523	0.60
November	24,037	1,490	530	801	.626	.70
December	27,165	2,500	540	876	.684	.79
Calendar year 1939	697,066	12,000	436	1,910	1.49	20.26
January	28,248	2,790	645	911	.712	.82
February	27,440	1,600	625	946	.739	.80
March	146,459	26,600	794	4,724	3.69	4.26
April	226,420	18,700	3,070	7,547	5.90	6.58
May	75,380	4,310	1,610	2,432	1.90	2.19
June	70,990	5,140	1,290	2,366	1.85	2.06
July	31,432	1,660	695	1,014	.792	.91
August	22,901	2,320	546	739	.577	.67
September	71,258	15,600	969	2,375	1.86	2.07
Water year 1939-40	772,489	26,600	449	2,111	1.65	22.45

Peak discharge.- Mar. 4 (4:30 p.m.) 11,100 sec.-ft.; Mar. 15 (7 a.m.) 35,000 sec.-ft.; Mar. 31 (11:30 a.m.) 33,300 sec.-ft.; Apr. 9 (1 p.m.) 16,500 sec.-ft.; Sept. 1 (6:30 a.m.) 17,600 sec.-ft.
a No gage-height record; discharge computed on basis of records for station at Tannery.

Aquashicola Creek at Palmerton, Pa.

Location.- Water-stage recorder, lat. 40°28'20", long. 75°35'55", 1,200 feet upstream from Sixth Street Bridge in Palmerton, Carbon County, and 1½ miles upstream from mouth. Datum of gage is 389.00 feet above mean sea level (general adjustment of 1929).

Drainage area.- 77.0 square miles.

Records available.- October 1939 to September 1940.

Extremes.- Maximum discharge during year, 4,550 second-feet Mar. 15 (gage height, 10.03 feet), from rating curve extended above 1,700 second-feet; minimum, 8.7 second-feet Feb. 15 (gage height, 2.06 feet); minimum daily, 22 second-feet Aug. 22, 25.

Remarks.- Records good. Some regulation owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	127	26	40	28	31	703	170	290	66	55	1,310
2	42	101	30	40	29	29	487	187	575	55	47	784
3	59	72	39	38	28	53	400	175	456	55	45	430
4	40	62	33	35	29	597	404	153	343	75	42	285
5	33	62	30	35	30	337	350	140	279	58	41	214
6	29	69	28	32	25	207	305	124	233	50	41	177
7	27	60	27	33	31	164	273	120	201	48	39	156
8	25	51	27	32	30	124	390	114	177	45	38	135
9	24	45	24	32	26	106	1,010	118	223	49	34	144
10	25	46	27	28	40	91	680	110	217	50	31	124
11	24	41	38	28	143	78	491	99	177	71	29	110
12	23	43	30	30	59	74	512	99	163	89	32	97
13	24	40	29	32	40	96	547	93	142	73	39	89
14	23	40	29	64	28	393	503	89	129	61	50	82
15	23	37	29	a320	26	2,520	426	89	129	52	34	79
16	23	37	27	102	36	582	364	98	124	50	29	73
17	23	34	27	71	31	347	309	157	108	47	29	68
18	23	35	28	66	28	409	285	110	99	44	27	63
19	24	34	27	54	31	577	251	108	97	42	27	61
20	23	34	94	47	47	510	442	120	89	39	26	56
21	26	32	173	50	50	450	635	158	80	39	24	58
22	40	30	131	47	46	338	563	140	79	36	22	55
23	33	29	105	42	43	260	464	151	75	38	26	52
24	28	30	82	41	39	213	382	144	89	123	25	47
25	26	28	74	40	37	181	329	178	89	148	22	108
26	27	28	68	34	35	163	285	231	81	106	46	96
27	28	27	55	34	30	149	242	273	72	97	45	66
28	40	28	54	32	37	240	211	254	66	79	104	60
29	40	27	52	31	33	194	194	217	91	66	80	53
30	33	27	52	29		381	177	189	68	63	63	52
31	68		44	29		1,330		206		58	272	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	969	68	23	31.3	0.406	0.47
November	1,356	127	27	45.2	.587	.65
December	1,539	173	24	49.6	.644	.74
Calendar year						
January	1,568	320	28	50.6	.657	.76
February	1,115	143	25	38.4	.499	.54
March	11,224	2,520	29	362	4.70	5.42
April	12,614	1,010	177	420	5.45	6.09
May	4,614	273	89	149	1.94	2.23
June	5,041	575	66	168	2.18	2.43
July	1,972	148	36	63.6	.826	.95
August	1,464	272	22	47.2	.613	.71
September	5,184	1,310	47	173	2.25	2.50
Water year 1939-40	48,660	2,520	22	133	1.73	23.49

Peak discharge.- Mar. 15 (4:30 a.m.) 4,550 sec.-ft.; Mar. 31 (4:30 a.m.) 1,740 sec.-ft; Apr. 9 (9:30 a.m.) 1,130 sec.-ft.; Sept. 1 (9 a.m.) 1,550 sec.-ft.

a No gage-height record; discharge computed on basis of precipitation records and records for nearby stations.

Tohickon Creek near Pipersville, Pa.

Location.- Water-stage recorder, lat. 40°26'00", long. 75°07'00", at highway bridge 1½ miles northeast of Pipersville, Bucks County, and 4½ miles upstream from mouth. Datum of gage is 258.43 feet above mean sea level (unadjusted).

Drainage area.- 97.4 square miles.

Records available.- July 1935 to September 1940.

Extremes.- Maximum discharge during year, 7,020 second-feet Mar. 15 (gage height, 7.64 feet), from rating curve extended above 3,600 second-feet; minimum, 0.3 second-foot Sept. 22, 23 (gage height, 0.47 foot); minimum daily, 0.4 second-foot Sept. 22.

1935-40: Maximum discharge, 11,000 second-feet Sept. 21, 1938 (gage height, 9.11 feet), from rating curve extended above 3,600 second-feet; minimum, that of Sept. 22, 23, 1940; minimum daily, that of Sept. 22, 1940.

Remarks.- Records good except those for periods of ice effect, which are poor. Regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	121	334	6.8	12	7.0	37	481	52	610	15	7.2	47
2	120	124	9.6	11	6.5	35	208	56	657	11	5.4	41
3	271	64	25	10	6.5	362	141	75	220	8.8	4.6	26
4	119	41	34	9.5	6.5	3,670	582	151	110	8.2	2.0	19
5	59	125	25	8.0	7.0	1,670	306	100	72	10	4.0	14
6	37	312	19	8.5	10	654	156	65	50	8.4	1.6	10
7	22	137	18	8.5	20	349	105	51	38	6.7	8.0	7.7
8	16	77	14	8.0	14	266	1,490	42	28	7.5	12	2.6
9	15	52	13	8.0	10	257	2,080	38	34	5.1	22	6.7
10	11	39	11	7.5	15	247	380	35	34	5.7	11	6.8
11	11	31	16	7.5	45	149	196	29	27	3.9	7.0	3.9
12	8.3	24	14	8.0	80	112	615	30	22	21	7.6	3.6
13	7.0	20	13	8.5	45	102	1,010	27	19	19	6.1	4.1
14	6.0	20	21	100	30	514	495	25	15	15	3.6	3.7
15	1.9	16	29	500	20	4,160	264	21	10	12	4.0	1.1
16	7.0	14	29	200	12	411	178	28	8.7	9.6	3.2	3.6
17	3.6	12	23	120	11	281	143	147	9.3	8.1	3.5	3.1
18	4.4	10	22	80	14	351	130	99	7.3	7.7	1.8	4.3
19	4.1	9.2	23	54	400	388	185	55	8.9	4.3	5.3	3.3
20	4.9	12	296	35	1,000	333	2,740	1,160	7.1	2.6	6.2	2.5
21	3.9	11	386	23	712	312	1,290	1,310	7.7	2.7	4.1	2.3
22	2.1	11	138	16	519	201	770	508	4.2	3.4	1.2	.4
23	4.1	9.9	74	11	322	136	324	247	3.3	3.9	3.6	1.9
24	3.2	9.5	60	10	200	86	192	170	9.7	4.5	3.2	2.4
25	4.8	7.4	45	*9.0	130	88	143	166	13	3.9	1.2	146
26	3.9	4.6	35	8.5	80	67	114	208	8.7	3.6	5.4	408
27	5.2	10	27	8.0	60	52	94	171	9.9	3.3	6.1	120
28	2.4	7.8	22	7.5	50	55	80	487	25	11	32	46
29	3.7	6.3	18	7.5	42	66	66	234	35	12	50	24
30	9.8	8.5	15	7.0		116	58	121	22	9.8	42	16
31	120		13	7.0		900		373		9.8	33	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,012.3	271	1.9	32.7	0.336	0.39
November	1,559.2	334	4.6	52.0	.534	.60
December	1,494.4	386	6.8	48.2	.495	.57
Calendar year 1939	46,192.2	1,990	.7	127	1.30	17.66
January	1,318.5	500	7.0	42.5	.436	.50
February	3,874.5	1,000	6.5	134	1.38	1.48
March	16,427	4,160	35	530	5.44	6.27
April	15,016	2,740	58	501	5.14	5.73
May	6,281	1,310	21	203	2.08	2.40
June	2,125.8	657	3.3	70.9	.728	.81
July	257.5	21	2.6	8.31	.085	.10
August	307.9	50	1.2	9.93	.102	.12
September	981.0	408	.4	32.7	.336	.37
Water year 1939-40	50,655.1	4,160	.4	138	1.42	19.34

Peak discharge.- Mar. 4 (3 p.m.) 6,260 sec.-ft.; Mar. 15 (2 a.m.) 7,020 sec.-ft.; Apr. 8 (10 p.m.) 5,260 sec.-ft.; Apr. 20 (9:30 a.m.) 3,740 sec.-ft.; May 20 (8 p.m.) 6,780 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 24 to Feb. 20, Feb. 24 to Mar. 2.

Neshaminy Creek near Langhorne, Pa.

Location.- Water-stage recorder, lat. 40°10'25", long. 74°57'30", at bridge on State Highway 213 half a mile downstream from Mill Creek and 1.7 miles west of Langhorne, Bucks County. Datum of gage is 40.57 feet above mean sea level (unadjusted).

Drainage area.- 210 square miles.

Records available.- October 1934 to September 1940.

Extremes.- Maximum discharge during year, 12,200 second-feet Mar. 15 (gage height, 11.45 feet), from rating curve extended above 2,600 second-feet on basis of contracted-opening determination at gage height, 15.94 feet; minimum, 7.7 second-feet Oct. 15 (gage height, 0.61 foot); minimum daily, 8.5 second-feet Oct. 15.
1934-40: Maximum discharge, 24,800 second-feet July 23, 1938 (gage height, 15.94 feet), by contracted-opening method; minimum, 6.0 second-feet Sept. 24, 28, 1937; minimum daily, 7.1 second-feet Sept. 24, 1939.
Maximum stage known, 17.3 feet, from floodmarks, Aug. 23, 1933 (discharge, 30,000 second-feet, from rating curve extended above 2,600 second-feet on basis of contracted-opening determination at gage height, 15.94 feet).

Remarks.- Records good except those for period of backwater from aquatic vegetation, which are fair, and those for periods of ice effect, which are poor. Some regulation from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	393	25	32	30	110	532	269	482	73	60	196
2	56	140	28	31	30	110	293	262	394	57	42	160
3	99	75	32	30	30	872	246	254	297	53	31	99
4	108	48	43	29	31	8,110	667	332	223	72	26	61
5	43	114	40	28	34	1,380	412	269	190	69	27	46
6	30	540	33	27	40	622	293	223	168	59	25	39
7	23	194	32	26	50	405	238	204	150	49	30	34
8	20	106	30	26	60	323	2,270	186	130	45	27	28
9	17	78	26	25	50	353	4,350	178	120	42	40	34
10	16	62	24	25	55	295	713	168	178	40	31	32
11	14	54	26	25	110	222	472	160	146	42	24	36
12	14	47	26	26	250	189	637	150	126	99	23	35
13	15	46	26	28	130	181	1,410	146	110	119	27	30
14	13	42	36	50	90	386	863	136	98	60	27	29
15	8.5	38	50	1,500	80	7,230	545	130	80	44	20	23
16	9.1	36	48	296	70	684	444	220	73	38	22	27
17	12	32	41	178	65	430	391	441	89	37	27	24
18	13	33	38	130	64	510	358	238	71	37	25	25
19	18	30	35	90	500	535	358	168	80	36	44	24
20	20	32	39	70	4,000	476	4,300	150	69	34	41	22
21	12	30	267	60	2,310	486	2,020	555	63	30	30	23
22	11	29	137	52	712	391	1,220	543	57	41	24	21
23	31	27	71	48	339	409	716	305	51	32	22	21
24	30	29	58	*45	240	254	540	266	51	31	24	21
25	20	27	47	42	233	238	467	227	109	30	19	446
26	16	26	42	38	200	204	417	227	79	71	35	910
27	16	27	39	36	150	208	370	219	66	48	36	147
28	15	25	37	34	130	182	333	269	107	40	165	81
29	23	28	35	33	120	175	301	277	191	53	225	58
30	22	23	34	32		190	281	190	122	45	95	46
31	105		33	31		436		816		36	59	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	867.6	108	8.5	28.0	0.133	0.15
November	2,411	540	23	80.4	.383	.43
December	1,478	267	24	47.7	.227	.26
Calendar year 1939	96,099.2	4,900	7.1	263	1.25	17.00
January	3,123	1,500	25	101	.481	.55
February	10,203	4,000	30	352	1.68	1.81
March	26,596	8,110	110	858	4.09	4.71
April	26,457	4,350	238	882	4.20	4.69
May	8,178	816	130	264	1.26	1.45
June	4,170	482	51	139	.662	.74
July	1,562	119	30	50.4	.240	.28
August	1,353	225	19	43.6	.208	.24
September	2,778	910	21	92.6	.441	.49
Water year 1939-40	89,176.6	8,110	8.5	244	1.16	15.80

Peak discharge.- Mar. 4 (4:30 p.m.) 11,600 sec.-ft.; Mar. 15 (9:45 a.m.) 12,200 sec.-ft.; Apr. 9 (2:30 a.m.) 10,600 sec.-ft.; Apr. 20 (2 p.m.) 8,350 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Jan. 15, Jan. 18 to Feb. 20, Feb. 26 to Mar. 2. Discharge for period of backwater from aquatic vegetation, Aug. 16 to Sept. 30, computed on basis of two discharge measurement, gage heights, and records for nearby stations.

Schuylkill River at Pottstown, Pa.

Location.- Water-stage recorder, lat. 40°14'30", long. 75°39'05", at Hanover Street Bridge in Pottstown, Montgomery County, a third of a mile downstream from Manatawny Creek. Datum of gage is 117.81 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 1,147 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; August 1927 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 13 years, 1,831 second-feet.

Extremes.- Maximum discharge during year, 27,000 second-feet Mar. 15 (gage height, 13.48 feet); minimum discharge recorded, 352 second-feet Aug. 4, 25 (gage height, 1.14 feet), but may have been less during period of ice effect.
1927-40: Maximum discharge, 44,200 second-feet Aug. 24,1933 (gage height, 19.2 feet), from rating curve extended above 19,000 second-feet; minimum, 87 second-feet Aug. 13, 1930 (gage height, 0.43 foot); minimum daily, 175 second-feet Sept. 19, 1932.
Maximum stage known, about 21.0 feet Feb. 28, 1902 (discharge, 50,000 second-feet, from rating curve extended above 19,000 second-feet).

Remarks.- Records good except those for periods of ice effect, which are fair. Regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,050	1,820	492	603	400	1,210	10,100	2,410	2,900	867	643	9,400
2	960	1,330	542	500	400	1,030	6,370	2,480	4,170	823	550	5,050
3	2,280	1,030	814	450	400	1,860	4,930	2,410	3,720	814	535	3,260
4	1,640	903	731	420	410	12,100	5,230	2,210	3,420	1,130	398	2,410
5	1,130	912	595	400	430	8,480	4,430	2,020	2,970	903	450	1,950
6	921	1,540	535	390	460	5,130	3,720	1,820	2,620	755	584	1,560
7	780	1,240	513	380	490	4,030	3,260	1,760	2,340	675	1,260	1,380
8	699	1,040	471	370	540	3,120	4,650	1,640	2,140	659	675	1,220
9	627	930	430	360	540	2,760	13,300	1,640	2,020	635	572	1,770
10	588	849	450	360	580	2,410	8,830	1,530	2,210	990	485	1,470
11	565	772	535	360	1,180	2,080	5,990	1,420	1,950	789	464	1,210
12	535	739	603	370	1,390	1,820	5,630	1,350	1,500	903	430	1,080
13	513	683	535	400	980	1,760	5,990	1,270	1,370	885	418	990
14	492	651	659	800	1,050	2,140	4,930	1,230	1,230	772	464	912
15	450	659	651	3,000	625	20,600	4,270	1,220	1,100	691	457	849
16	430	627	572	1,840	673	8,740	3,870	1,310	1,050	627	430	823
17	418	595	528	1,160	723	5,060	3,490	1,640	1,000	643	437	780
18	430	580	550	950	798	4,430	3,190	1,390	980	675	492	747
19	424	572	520	800	1,870	4,030	3,190	1,200	990	611	506	723
20	424	535	1,090	660	3,790	4,270	7,570	2,700	960	611	485	731
21	418	513	2,900	580	3,870	4,270	10,400	3,090	876	542	437	659
22	430	520	2,080	530	2,970	3,870	7,970	2,480	823	528	404	643
23	464	528	1,580	500	2,210	3,190	6,180	2,280	806	528	398	635
24	404	520	1,260	490	1,820	2,690	5,100	2,140	867	846	385	603
25	392	492	1,020	480	1,760	2,410	4,430	2,340	1,060	789	374	3,090
26	404	471	1,100	*470	1,500	2,140	3,950	3,270	980	580	586	3,020
27	424	457	980	450	1,300	2,080	3,490	4,360	912	1,360	643	1,470
28	570	457	832	440	1,150	2,020	3,040	3,340	912	970	1,490	1,130
29	747	485	858	420	1,220	2,280	2,760	3,340	1,040	739	1,350	950
30	558	485	885	410		2,140	2,620	2,760	1,010	635	894	876
31	938		772	400		12,700		3,040		772	1,000	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	21,105	2,280	392	681	0.594	0.68
November	22,935	1,820	457	764	.666	.74
December	26,083	2,900	430	841	.733	.85
Calendar year 1939	588,137	9,660	281	1,611	1.40	19.06
January	19,743	3,000	360	637	.555	.64
February	35,529	3,870	400	1,225	1.07	1.15
March	136,850	20,600	1,030	4,415	3.85	4.44
April	162,880	13,300	2,620	5,429	4.73	5.28
May	67,090	4,360	1,200	2,164	1.89	2.18
June	49,926	4,170	806	1,664	1.45	1.62
July	23,747	1,360	528	766	.668	.77
August	18,696	1,490	374	603	.526	.61
September	51,391	9,400	603	1,713	1.49	1.67
Water year 1939-40	635,975	20,600	360	1,733	1.52	20.62

Peak discharge.- Mar. 4 (2:30 p.m.) 16,000 sec.-ft.; Mar. 15 (4 p.m.) 27,000 sec.-ft.; Mar. 31 (4:30 p.m.) 17,100 sec.-ft.; Apr. 9 (9 a.m.) 15,000 sec.-ft.; Apr. 21 (3:30 a.m.) 11,400 sec.-ft.; Sept. 1 (10:30 a.m.) 13,100 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 2-15, Jan. 18 to Feb. 10.

Schuylkill River at Philadelphia, Pa.

Location.- Water-stage recorder, lat. 39°58'00", long. 75°11'20", just upstream from Fairmount Dam in Philadelphia, Philadelphia County. Datum of gage is that of city of Philadelphia, 5.23 feet above mean sea level (general adjustment of 1907).
Drainage area.- 1,893 square miles.
Records available.- January 1898 to December 1912, September 1931 to September 1940 in reports of U. S. Geological Survey; January 1903 to December 1912, September 1931 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.- 18 years (1903-12, 1931-40), 2,641 second-feet.
Extremes.- Maximum discharge during year, 49,600 second-feet Mar. 15 (gage height, 11.72 feet), from rating curve extended above 20,000 second-feet; minimum, 11 second-feet Oct. 23 (gage height, 5.48 feet); minimum daily, 210 second-feet Jan. 9.
1898-1912, 1931-40: Maximum discharge, about 92,000 second-feet Mar. 1, 1902 (gage height, about 14.8 feet); no flow over dam at times; minimum daily discharge, 38 second-feet Sept. 20, 1932.
Maximum stage known, about 17.0 feet Oct. 4, 1869 (discharge, about 127,000 second-feet).
Remarks.- Records good except those for periods of no gage-height record and those for periods of ice effect, all of which are fair. Regulation from storage reservoirs upstream. Records of daily discharge do not include water diverted above station by city of Philadelphia for municipal use.
Cooperation.- Record of diversion furnished by city of Philadelphia.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,130	3,310	393	600	300	1,530	14,000	3,360	4,610	1,100	747	7,890
2	2,120	2,190	428	423	290	1,370	8,680	3,310	5,120	880	440	7,600
3	4,920	1,490	620	304	350	2,180	6,760	3,420	5,240	808	400	4,380
4	2,870	1,180	1,050	288	320	29,900	7,480	3,200	4,440	1,100	395	2,930
5	1,710	1,060	630	270	360	17,900	6,820	2,870	a3,900	1,250	318	2,290
6	1,270	2,040	474	250	350	8,800	5,300	2,550	a3,400	868	336	1,850
7	780	2,040	476	240	440	6,640	4,550	2,350	a3,000	713	1,060	1,450
8	866	1,450	419	250	490	5,120	6,930	2,140	a2,600	664	1,200	1,330
9	746	1,250	338	210	480	4,490	25,400	1,990	2,400	631	545	1,330
10	570	965	349	240	450	3,870	13,000	1,940	2,610	588	413	1,900
11	563	859	376	240	1,530	3,360	8,860	1,850	2,500	969	334	1,410
12	a520	655	408	250	2,660	2,710	7,840	1,710	2,090	1,160	346	1,170
13	a470	770	516	330	1,760	2,450	11,600	1,800	1,670	1,290	328	1,030
14	a430	686	638	680	1,410	2,710	8,500	1,670	1,440	860	a380	824
15	a360	622	638	6,070	1,160	34,800	6,940	1,580	1,130	756	a360	821
16	a360	655	602	4,040	678	17,800	5,990	1,770	1,270	606	a360	731
17	312	560	516	2,180	818	7,960	5,360	2,400	1,100	555	599	741
18	288	456	506	1,070	1,030	7,000	4,840	2,290	1,140	652	438	632
19	354	520	418	859	2,750	6,290	4,720	1,670	1,060	571	614	606
20	322	536	632	690	9,100	6,170	16,900	1,530	1,070	563	575	612
21	340	453	3,020	610	7,900	5,990	17,100	14,500	920	430	434	546
22	404	432	3,090	560	5,990	5,760	13,000	5,010	880	524	371	483
23	399	452	2,040	500	3,980	5,010	9,450	3,920	760	418	300	525
24	363	458	1,580	490	2,980	4,040	7,780	3,470	900	500	320	526
25	298	354	1,140	450	2,610	3,530	6,700	3,310	1,250	1,560	272	5,420
26	334	378	1,100	400	2,350	3,090	5,760	3,920	1,210	1,330	625	8,840
27	366	407	825	380	1,990	2,760	5,120	5,760	952	623	837	3,020
28	446	371	772	350	1,620	2,710	4,380	5,010	989	1,370	1,910	1,760
29	550	324	807	350	1,490	2,930	3,980	4,780	1,290	881	2,600	1,410
30	799	376	879	330		2,980	3,640	3,870	1,290	611	1,520	1,210
31	1,020		780	300		9,090		4,610		802	938	

Month	Observed				Diversion	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean	(mean)**	Mean	Per square mile	Run-off in inches
October	26,280	4,920	288	848	266	1,114	0.588	0.68
November	27,299	3,310	324	910	261	1,171	.619	.69
December	26,460	3,090	338	854	260	1,114	.588	.68
Calendar year 1939	896,092	22,400	138	2,455	257	2,712	1.43	19.44
January	24,204	6,070	210	781	267	1,048	.554	.64
February	57,636	9,100	290	1,987	271	2,258	1.19	1.28
March	220,940	34,800	1,370	7,127	249	7,376	3.90	4.50
April	257,380	25,400	3,640	8,579	251	8,830	4.66	5.20
May	103,560	14,500	1,530	3,341	253	3,594	1.90	2.19
June	62,231	5,240	760	2,074	261	2,335	1.23	1.37
July	25,633	1,560	418	827	282	1,109	.586	.68
August	20,315	2,600	272	655	276	931	.492	.57
September	65,267	8,840	483	2,176	264	2,440	1.29	1.44
Water year 1939-40	917,205	34,800	210	2,506	263	2,769	1.46	19.92

Peak discharge.- Mar. 4 (6 p.m.) 43,600 sec.-ft.; Mar. 15 (12:30 p.m.) 49,600 sec.-ft.; Apr. 9 (4:30 a.m.) 34,400 sec.-ft.; Apr. 20 (3 p.m.) 28,100 sec.-ft.; May 21 (5:30 a.m.) 30,100 sec.-ft.
** Diversion by city of Philadelphia for municipal use.
a No gage-height record; discharge computed on basis of records for stations upstream.
Note.- Stage-discharge relation affected by ice Jan. 5-14, Jan. 20 to Feb. 10.

Little Schuylkill River at Tamaqua, Pa.

Location.- Water-stage recorder and concrete control, lat. 40°48'20", long. 75°58'20", at Panther Valley Water Co. pumping plant, 0.6 mile upstream from Tamaqua, Schuylkill County, and 0.8 mile upstream from Panther Creek. Datum of gage is 817.46 feet above mean sea level (Pennsylvania State highway benchmark).
Drainage area.- 42.9 square miles.
Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; June 1916 to September 1940 in reports of Pennsylvania Department of Forests and Waters. Records prior to Oct. 1, 1928, obtained at site 0.6 mile downstream.
Average discharge.- 22 years (1916-17, 1919-40), 92.3 second-feet (adjusted).
Extremes.- Maximum discharge during year, 2,540 second-feet Mar. 30 (gage height, 6.32 feet); minimum, 7.9 second-feet Oct. 16, 19 (gage height, 1.41 feet).
1916-40: Maximum discharge, 3,740 second-feet Aug. 24, 1933 (gage height, 7.50 feet); minimum, 1.8 second-feet Dec. 18, 1930 (gage height, 1.21 feet); minimum daily, 3.0 second-feet Dec. 23, 1930.
Remarks.- Records good except those for period of no gage-height record, which are fair, and those for period of ice effect, which are poor. Regulation from storage in Still Creek Reservoir. Figures of daily discharge do not include water diverted from reservoir.
Cooperation.- Record of diversion furnished by Panther Valley Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18.6	49	14.3	32	23	20	519	85	205	29	12.8	347
2	14.2	35	20	31	22	20	229	83	229	31	10.6	172
3	38	30	34	30	22	29	255	80	198	25	12.6	115
4	19.7	28	27	29	22	180	262	72	160	28	12.0	93
5	14.4	32	20	28	23	110	215	67	133	21	9.5	80
6	12.0	42	19.1	27	24	84	183	62	111	22	12.6	65
7	10.6	34	14.9	26	25	72	160	58	95	18.1	18.9	58
8	9.0	32	16.8	*26	23	60	273	52	85	22	14.3	51
9	9.3	29	17.6	25	*22	58	364	52	80	25	13.1	58
10	9.3	31	15.3	24	23	56	272	50	74	25	13.8	50
11	9.1	28	22	24	45	52	218	41	67	24	9.5	47
12	9.5	28	37	24	55	52	236	36	60	30	11.6	39
13	9.5	27	20	25	45	64	200	36	54	29	12.0	35
14	10.3	27	18.9	28	38	170	178	34	48	23	9.5	34
15	8.8	23	29	150	30	691	162	35	50	17.3	9.7	32
16	8.4	22	19.2	100	26	182	147	39	43	19.0	9.1	29
17	9.0	24	17.0	80	26	140	138	39	39	16.6	12.9	30
18	9.3	19.6	16.6	65	27	168	124	36	39	20	12.0	31
19	8.4	20	16.1	56	*31	309	109	33	41	18.4	10.7	27
20	9.3	21	25	50	45	316	279	34	36	18.2	10.3	24
21	16.0	20	120	45	35	260	309	38	31	17.0	9.5	30
22	43	19.2	80	42	32	200	283	32	a35	16.6	9.0	27
23	14.8	15.9	62	39	30	160	272	30	a31	23	9.7	24
24	12.6	22	52	37	28	135	198	30	a35	22	10.5	27
25	11.1	16.4	50	35	26	113	165	40	42	16.2	8.4	51
26	11.0	16.7	48	33	24	110	145	224	34	17.4	13.5	42
27	14.8	17.4	40	31	23	112	129	160	31	18.3	18.2	26
28	31	17.2	35	29	22	231	113	150	33	12.8	53	24
29	23	14.2	34	27	21	140	101	124	46	14.8	21	20
30	15.5	14.0	36	25		816	91	109	33	14.2	12.6	20
31	33		34	24		1,210		126		12.6	497	

Month	Observed				Diversion	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean	(mean)**	Mean	Per square mile	Run-off in inches
October	472.5	43	8.4	15.2	15.6	30.8	0.718	0.83
November	754.6	49	14.0	25.2	13.7	38.9	.907	1.01
December	1,010.8	120	14.3	32.6	11.5	44.1	1.03	1.19
Calendar year 1939	20,735.5	363	6.4	56.8	13.4	70.2	1.64	22.22
January	1,247	150	24	40.2	19.3	59.5	1.39	1.60
February	838	55	21	28.9	12.7	41.6	.970	1.05
March	6,320	1,210	20	204	12.5	216	5.03	5.80
April	6,329	519	91	211	12.6	224	5.22	5.82
May	2,087	224	30	67.3	12.8	80.1	1.87	2.16
June	2,198	229	31	73.3	13.0	86.3	2.01	2.24
July	646.5	31	12.6	20.9	12.4	33.3	.776	.89
August	899.9	497	8.4	29.0	10.2	39.2	.914	1.09
September	1,708	347	20	56.9	13.7	70.6	1.65	1.84
Water year 1939-40	24,511.3	1,210	8.4	67.0	13.3	80.3	1.87	25.52

Peak discharge.- Mar. 15 (2 a.m.) 1,460 sec.-ft.; Mar. 30 (10:45 p.m.) 2,540 sec.-ft.; Aug. 31 (2 p.m.) 1,340 sec.-ft.
* Winter discharge measurement made on this day.
** Diversion from Still Creek Reservoir.
a No gage-height record; discharge computed on basis of recorded range in stage and records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 21 to Mar. 14.

Perkiomen Creek at Graters Ford, Pa.

Location.- Water-stage recorder, lat. 40°13'45", long. 75°27'10", 1,650 feet upstream from highway bridge at Graters Ford, Montgomery County, and 2½ miles north of Collegeville. Datum of gage is 112.37 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 279 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; June 1914 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 16 years (1914-16, 1926-40), 405 second-feet.

Extremes.- Maximum discharge during year, 22,100 second-feet May 20 (gage height, 13.28 feet), from rating curve extended above 12,000 second-feet; minimum, 13 second-feet Sept. 24 (gage height, 0.90 foot); minimum daily, 32 second-feet Oct. 21, Aug. 25.
1914-40: Maximum discharge, 41,200 second-feet July 9, 1935 (gage height, 18.26 feet), from rating curve extended above 12,000 second-feet; minimum, 8.0 second-feet Sept. 28, 1939 (gage height, 0.82 foot); minimum daily, 11 second-feet Sept. 18, 25, 1932.

Remarks.- Records good except those for period of backwater, which are fair, and those for periods of ice effect, which are poor. Some regulation from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	311	660	47	54	50	140	878	233	597	85	83	806
2	660	223	51	51	49	130	437	246	1,090	76	56	300
3	865	147	141	49	48	1,290	339	283	444	68	45	175
4	264	112	115	48	48	9,010	1,090	246	307	115	40	119
5	152	129	83	47	50	2,090	594	221	246	108	42	141
6	107	468	68	46	56	1,220	372	193	208	82	55	76
7	86	228	62	45	66	724	288	171	168	60	271	66
8	71	161	60	46	80	522	3,260	148	151	55	119	60
9	63	122	47	44	66	522	4,580	145	138	59	70	167
10	57	102	45	42	64	470	1,050	138	148	121	54	118
11	54	89	51	42	900	306	630	129	154	126	46	89
12	47	80	53	43	374	251	1,470	124	145	521	42	67
13	44	74	53	48	212	235	1,960	121	129	168	39	60
14	42	76	76	100	260	841	1,140	115	111	99	43	51
15	39	66	91	1,700	200	9,520	733	111	92	73	51	49
16	47	60	81	500	170	954	585	129	92	78	45	47
17	41	63	67	370	160	638	481	353	85	60	44	57
18	39	59	67	280	150	830	425	215	84	91	64	40
19	36	54	67	210	800	808	481	154	92	56	77	42
20	38	58	316	160	2,480	661	5,660	4,220	80	60	65	41
21	32	52	682	130	1,450	593	2,340	4,550	66	42	50	39
22	38	51	257	110	867	431	1,450	1,120	59	40	43	40
23	43	48	161	100	496	320	808	692	60	35	42	41
24	43	51	144	94	360	223	571	535	75	42	36	43
25	49	44	120	*84	347	213	481	667	130	153	32	2,580
26	38	40	100	74	260	174	425	669	105	357	67	1,080
27	35	48	85	66	200	182	349	528	84	200	125	324
28	46	46	74	62	170	178	297	824	97	104	827	204
29	88	43	68	58	150	197	264	527	233	67	399	161
30	74	46	64	55		233	237	360	115	119	193	129
31	289		58	52		1,300		659		156	229	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,838	865	32	124	0.444	0.51
November	3,500	660	40	117	.419	.47
December	3,454	682	45	111	.398	.46
Calendar year 1939	122,353	5,840	16	335	1.20	16.30
January	4,810	1,700	42	155	.556	.64
February	10,583	2,480	48	365	1.31	1.41
March	35,206	9,520	130	1,136	4.07	4.69
April	33,675	5,660	237	1,122	4.02	4.49
May	18,826	4,550	111	607	2.18	2.51
June	5,585	1,090	59	186	.667	.74
July	3,476	521	35	112	.401	.46
August	3,394	827	32	109	.391	.45
September	7,212	2,580	39	240	.860	.96
Water year 1939-40	133,559	9,520	32	365	1.31	17.79

Peak discharge.- Mar. 4 (1:30 p.m.) 13,300 sec.-ft.; Mar. 15 (6 a.m.) 20,300 sec.-ft.; Apr. 8 (12 p.m.) 13,600 sec.-ft.; Apr. 20 (10:30 a.m.) 10,300 sec.-ft.; May 20 (9:30 p.m.) 22,100 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Discharge for period of backwater from weeds and leaves, Oct. 1 to Dec. 19, computed on basis of two discharge measurements, gage heights, and records for nearby stations. Stage-discharge relation affected by ice Dec. 25 to Feb. 11, Feb. 14-19, Feb. 26 to Mar. 2.

Ridley Creek at Moylan, Pa.

Location.- Water-stage recorder, lat. 39°54'05", long. 75°23'35", at Fox Bank Bridge, at Moylan, Delaware County, 1 mile south of Media. Datum of gage is 87.36 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 31.9 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; August 1931 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 2,210 second-feet Mar. 15 (gage height, 6.14 feet), from rating curve extended above 430 second-feet; minimum, 2.5 second-feet Oct. 23 (gage height, 0.42 foot); minimum daily, 12 second-feet Aug. 12.

1931-40: Maximum discharge, 4,500 second-feet July 23, 1938 (gage height, 8.16 feet), from rating curve extended above 430 second-feet; minimum, 1.6 second-feet Oct. 2, 1932; minimum daily, 3.8 second-feet Sept. 14, 1932.

Remarks.- Records good except those for period of ice effect, which are fair. Flow regulated by storage in reservoir of Media Water Co., which diverts about 1.08 second-feet daily to supply borough of Media.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	60	20	18	18	34	49	58	64	29	17	88
2	128	31	25	20	17	33	43	61	55	27	15	35
3	81	28	32	18	17	232	44	60	48	30	15	26
4	32	23	25	17	17	756	89	58	43	47	15	21
5	28	36	23	18	17	106	53	54	40	31	15	20
6	26	48	21	16	24	77	46	51	40	28	19	16
7	23	29	22	18	31	61	42	50	35	25	20	18
8	22	27	20	20	23	56	275	49	35	25	18	18
9	20	26	21	17	21	53	200	50	39	24	17	20
10	19	22	21	18	33	49	80	47	69	23	15	19
11	18	24	23	18	52	44	66	45	42	26	14	16
12	20	22	19	18	29	41	106	49	39	32	12	17
13	19	22	24	20	26	40	117	45	36	28	13	16
14	18	21	38	93	38	180	88	44	34	24	20	17
15	17	24	29	200	28	766	73	41	32	23	14	16
16	18	20	25	41	35	90	69	61	32	21	15	17
17	18	21	26	27	29	76	65	78	30	21	39	15
18	18	20	24	23	26	73	63	49	37	23	22	14
19	17	23	23	21	279	73	69	45	35	20	24	15
20	18	20	47	20	172	61	362	53	31	22	19	15
21	18	21	48	19	85	55	139	206	29	18	16	16
22	28	20	30	18	56	58	104	79	29	18	15	15
23	18	25	26	*18	43	51	83	63	29	20	15	14
24	17	23	24	18	38	46	79	54	36	21	14	14
25	17	21	22	18	40	45	74	57	42	26	16	84
26	18	20	23	17	36	43	74	55	34	20	49	43
27	18	21	22	16	32	45	67	52	29	18	29	19
28	27	19	21	16	33	46	63	66	30	17	100	19
29	21	21	23	16	34	45	61	49	35	15	38	18
30	22	21	23	17		50	59	48	29	18	27	16
31	110		20	18		69		143		16	51	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	917	128	17	29.6	0.928	1.07
November	759	60	19	25.3	.793	.88
December	790	48	19	25.5	.799	.92
Calendar year 1939	19,131	518	12	52.4	1.64	22.31
January	852	200	16	27.5	.862	.99
February	1,329	279	17	45.8	1.44	1.55
March	3,454	766	33	111	3.48	4.02
April	2,802	362	42	93.4	2.93	3.27
May	1,920	206	41	61.9	1.94	2.24
June	1,138	69	29	37.9	1.19	1.33
July	736	47	15	23.7	.743	.86
August	728	100	12	23.5	.737	.85
September	697	88	14	23.2	.727	.81
Water year 1939-40	16,122	766	12	44.0	1.38	18.79

Peak discharge.- Mar. 4 (10:30 a.m.) 1,230 sec.-ft.; Mar. 15 (2:45 a.m.) 2,210 sec.-ft.; Apr. 20 (10 a.m.) 700 sec.-ft.
*Winter discharge measurements made on this day.
Note.- Stage-discharge relation affected by ice Jan. 18 to Feb. 6.

Chester Creek near Chester, Pa.

Location.- Water-stage recorder, lat. 39°52'10", long. 75°24'30", at Dutton Mill Bridge, 3 miles northwest of Chester, Delaware County. Datum of gage is 23.54 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 61.1 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; August 1931 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 3,500 second-feet Mar. 15 (gage height, 10.28 feet), from rating curve extended above 800 second-feet; minimum, 10 second-feet Oct. 16 (gage height, 0.62 foot); minimum daily, 24 second-feet Sept. 18.

1931-40: Maximum discharge, 4,270 second-feet Aug. 23, 1933 (gage height, 11.48 feet), from rating curve extended above 800 second-feet; minimum, 0.3 second-foot Aug. 7, 1934 (gage height, 0.28 foot); minimum daily, 6.8 second-feet Sept. 11, 14, 1932.

Remarks.- Records good except those for periods of ice effect and those for period of recorder failure, all of which are fair. Regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	126	31	33	31	52	81	87	150	48	30	133
2	181	58	42	31	29	48	66	94	110	45	27	56
3	130	46	49	30	29	442	66	94	90	50	25	42
4	57	41	41	29	29	1,340	124	91	80	90	27	38
5	45	65	35	30	30	185	78	83	74	60	26	32
6	38	86	33	31	34	114	65	78	68	55	27	32
7	36	53	31	30	48	92	116	76	64	50	42	31
8	33	45	32	29	35	81	490	72	60	47	30	30
9	32	42	33	28	32	74	438	75	70	45	28	39
10	32	38	30	28	54	68	128	70	200	43	28	35
11	30	38	33	28	94	61	101	69	110	43	27	31
12	29	37	29	29	47	55	179	74	90	69	27	30
13	29	36	35	31	41	55	222	68	75	48	28	29
14	28	36	60	192	79	385	144	66	64	44	30	28
15	28	35	42	380	50	1,220	114	63	56	41	29	27
16	28	35	38	68	74	146	103	94	52	42	29	28
17	28	35	35	49	47	117	97	137	50	46	59	29
18	28	35	35	41	42	111	99	76	60	49	43	24
19	28	35	39	37	687	116	110	68	56	42	39	26
20	28	35	90	34	359	92	702	85	50	36	36	26
21	30	32	81	32	151	82	257	499	48	36	30	25
22	62	35	50	31	93	86	162	149	47	34	28	26
23	35	38	43	*30	65	75	127	111	46	36	32	26
24	31	36	38	30	58	66	115	94	50	38	27	25
25	29	35	35	29	59	65	108	103	70	60	30	132
26	30	35	36	28	52	62	103	100	58	38	95	76
27	31	32	33	28	47	64	99	92	50	34	56	37
28	48	35	36	28	49	65	93	115	53	31	171	32
29	44	32	36	28	50	66	90	82	56	31	63	30
30	35	31	37	29		77	87	75	52	31	46	28
31	256		35	30		115		312		33	78	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,580	256	28	51.0	0.835	0.96
November	1,298	126	31	43.3	.709	.79
December	1,253	90	29	40.4	.661	.76
Calendar year 1939	34,690	1,090	25	95.0	1.55	21.11
January	1,511	380	28	48.7	.797	.92
February	2,495	687	29	86.0	1.41	1.52
March	5,677	1,340	48	183	3.00	3.46
April	4,764	702	65	159	2.60	2.90
May	3,352	499	63	108	1.77	2.04
June	2,159	200	46	72.0	1.18	1.31
July	1,395	90	31	45.0	.736	.85
August	1,293	171	25	41.7	.682	.79
September	1,183	133	24	39.4	.645	.72
Water year 1939-40	27,960	1,340	24	76.4	1.25	17.02

Peak discharge.- Mar. 4 (11 a.m.) 2,160 sec.-ft.; Mar. 15 (1 a.m.) 3,500 sec.-ft.; Apr. 8 (7:30 p.m.) 1,600 sec.-ft.; Apr. 20 (8 a.m.) 1,440 sec.-ft.; May 21 (2 p.m.) 1,880 sec.-ft.
*Winter discharge measurements made on this day.
Note.- Discharge for periods of backwater from obstructions on control, Oct. 1 to Dec. 20, Aug. 10 to Sept. 30, computed on basis of gage heights and 5 discharge measurements. Stage-discharge relation affected by ice Dec. 31 to Jan. 13, Jan. 18 to Feb. 9. Discharge for period of recorder failure, June 1 to July 9, computed on basis of partial record and records for nearby stations.

Brandywine Creek at Chadds Ford, Pa.

Location.- Water-stage recorder, lat. 39°52'10", long. 75°35'35", at Pennsylvania Railroad bridge at Chadds Ford, Delaware County. Datum of gage is 150.19 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 287 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1911 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 29 years, 381 second-feet.

Extremes.- Maximum discharge during year, 6,190 second-feet Mar. 15 (gage height, 9.65 feet); minimum, 89 second-feet Sept. 23 (gage height, 0.66 foot); minimum daily, 120 second-feet Sept. 23.

1911-40: Maximum discharge, 30,500 second-feet Mar. 5, 1920 (gage height, 15.0 feet, from floodmark), from rating curve extended above 7,000 second-feet; minimum, 18 second-feet Jan. 22, 1931 (gage height, 0.34 foot); minimum daily, 50 second-feet Sept. 11, 13, 23, 1932.

Remarks.- Records good except those for periods of ice effect and those for periods of no gage-height record, all of which are fair. Regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	371	787	166	158	b155	278	435	499	613	259	142	543
2	592	318	197	b155	b150	256	353	554	488	230	139	266
3	1,050	243	268	b150	b155	1,240	339	554	411	263	136	194
4	333	215	227	b150	160	4,430	848	499	367	346	134	171
5	246	243	191	b150	166	1,390	479	474	350	268	134	158
6	215	401	183	b155	180	832	384	438	333	a240	134	149
7	197	268	180	b155	227	665	346	421	307	a220	191	142
8	186	230	171	b150	206	535	1,250	397	294	203	163	139
9	180	209	163	b150	177	554	2,860	401	369	200	142	157
10	171	197	163	b150	223	460	866	384	1,040	194	139	152
11	166	197	171	b150	441	397	646	374	438	201	129	142
12	163	191	160	b155	286	348	819	425	367	292	129	138
13	160	188	174	b165	218	340	1,170	377	326	221	132	136
14	160	188	240	494	333	757	788	360	294	200	142	132
15	155	183	206	1,540	193	4,360	646	340	278	186	134	126
16	158	180	186	393	276	1,010	609	396	265	180	132	131
17	158	180	186	249	246	684	572	631	252	202	168	128
18	155	177	183	b230	221	665	554	411	297	266	163	126
19	158	177	180	b210	1,460	628	572	357	310	194	163	123
20	158	174	264	b200	1,840	554	2,610	404	272	177	144	123
21	160	171	447	b200	1,010	499	1,520	1,280	249	168	136	123
22	212	171	246	*b195	636	481	967	527	246	166	126	122
23	180	180	203	b180	432	418	788	446	246	168	126	120
24	163	171	186	b170	360	370	704	408	268	194	124	122
25	155	171	174	b165	353	367	665	470	420	183	126	1,510
26	158	171	186	b160	351	340	665	517	288	163	306	a700
27	160	168	168	b155	291	357	609	456	256	155	224	a300
28	219	168	174	b150	281	363	554	477	252	214	514	a220
29	233	166	183	b150	272	360	535	411	353	180	298	a180
30	180	166	180	b150		380	517	360	259	160	203	158
31	675		166	b155		572		1,050		155	280	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,627	1,050	155	246	0.857	0.99
November	6,649	787	166	222	.774	.86
December	6,172	447	160	199	.693	.80
Calendar year 1939	159,754	3,750	140	438	1.53	20.67
January	7,139	1,540	150	230	.801	.93
February	11,299	1,840	150	390	1.36	1.46
March	24,888	4,430	256	803	2.80	3.23
April	24,670	2,860	339	822	2.86	3.20
May	15,098	1,280	340	487	1.70	1.96
June	10,508	1,040	246	350	1.22	1.36
July	6,448	346	155	208	.725	.84
August	5,353	514	124	173	.603	.69
September	6,931	1,510	120	231	.805	.90
Water year 1939-40	132,782	4,430	120	363	1.26	17.22

Peak discharge.- Mar. 4 (2 p.m.) 5,370 sec.-ft.; Mar. 15 (9:30 a.m.) 6,190 sec.-ft.; Apr. 9 (4 a.m.) 5,080 sec.-ft.; Apr. 20 (4 p.m.) 4,280 sec.-ft.
*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of range in stage shown by recorder graph and by comparison with records for nearby stations.
b Stage-discharge relation affected by ice.

SUSQUEHANNA RIVER BASIN

North Branch of Susquehanna River near Waverly, N. Y.

Location.- Water-stage recorder, lat. 41°59'05", long. 76°30'05", 1,000 feet upstream from Cayuta Creek, 2,000 feet upstream from bridge at Sayre, Bradford County, Pa., and 2½ miles downstream from Waverly, Tioga County, N. Y. Datum of gage is 743.98 feet above mean sea level (furnished by Corps of Engineers, U. S. Army). Prior to Nov. 1, 1939, at datum 1.00 foot higher.
Drainage area.- 4,780 square miles.
Records available.- February 1937 to September 1940.
Extremes.- 1937: Maximum discharge during period February to September, 47,500 second-feet Apr. 8 (gage height, 10.30 feet); minimum, 1,100 second-feet Aug. 6 (gage height, 0.20 foot).
1937-38: Maximum discharge during water year, 54,900 second-feet Sept. 23 (gage height, 11.55 feet); minimum, 842 second-feet July 14 (gage height, -0.01 foot).
1938-39: Maximum discharge during water year, 72,800 second-feet Feb. 21 (gage height, 14.25 feet); minimum, 247 second-feet Sept. 24, 25 (gage height, -0.48 foot).
1939-40: Maximum discharge during water year, 106,000 second-feet Apr. 1 (gage height, 19.00 feet, present datum); minimum, 342 second-feet Oct. 17 (gage height, -0.37 foot, former datum).
1937-40: Maximum discharge, that of Apr. 1, 1940; minimum, that of Sept. 24, 25, 1939.
Remarks.- Records good except those for periods of ice effect and those for period of shifting control, all of which are fair.
Cooperation.- Records furnished by U. S. Geological Survey, Albany, N. Y.

Discharge, in second-feet, water year October 1936 to September 1937.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						6,800	10,000	10,400	4,000	5,700	1,340	a3,400
2						6,300	14,000	8,900	3,650	6,400	1,440	a3,000
3						6,100	16,200	7,700	3,550	a6,100	1,400	a2,700
4						6,000	15,000	6,900	3,700	a5,300	1,300	a2,800
5						8,300	14,600	6,100	3,850	a4,550	1,180	a4,800
6						8,800	21,400	7,600	3,950	a3,900	1,140	a7,400
7						7,700	43,000	8,300	4,200	3,300	1,120	a7,000
8						6,500	43,500	7,400	4,450	2,800	1,200	a5,200
9						6,800	35,000	6,500	a3,500	2,550	1,220	a4,000
10						6,000	33,500	5,800	a2,850	2,260	3,050	a3,200
11						5,300	25,000	5,200	a2,650	2,040	3,500	a2,900
12					a8,800	4,650	19,800	4,900	2,900	2,000	3,050	a2,600
13					7,600	4,750	16,800	4,500	2,800	2,160	3,450	a2,400
14					6,700	4,500	15,600	4,650	2,850	3,100	4,150	a2,500
15					7,700	4,300	19,800	6,600	3,650	3,200	3,500	3,500
16					8,300	4,200	28,000	10,200	4,350	2,700	2,650	4,650
17					7,000	4,000	28,000	12,400	3,800	2,500	2,120	4,050
18					5,900	3,850	22,800	11,000	3,100	2,420	1,860	3,300
19					5,200	3,850	20,000	10,600	a3,400	2,260	1,620	3,050
20					5,100	4,200	17,600	9,900	a3,300	2,500	1,480	2,850
21					5,000	6,100	15,400	9,400	a3,800	2,360	1,440	2,850
22					11,800	9,200	23,600	8,700	a16,000	1,960	2,300	2,700
23					20,800	10,800	37,500	8,500	17,200	1,780	2,140	2,380
24					18,200	11,600	31,000	8,200	11,200	1,560	2,160	2,080
25					13,600	a14,000	22,000	7,100	7,300	1,440	1,900	1,860
26					10,600	a11,000	16,600	6,100	5,500	1,400	1,600	1,860
27					9,000	9,600	15,400	6,400	4,500	1,360	a4,000	1,760
28					7,800	7,800	15,600	8,000	4,250	1,360	a14,000	1,680
29						6,700	14,400	6,400	5,000	1,360	a10,000	1,580
30						6,300	12,200	5,300	5,300	1,340	a7,000	1,540
31						7,200		4,500		1,380	4,500	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February 12-28	159,100	20,800	5,000	9,359	1.96	1.24
March	213,200	14,000	3,850	6,877	1.44	1.66
April	663,300	43,500	10,000	22,110	4.63	5.17
May	234,150	12,400	4,500	7,553	1.58	1.82
June	150,550	17,200	2,650	5,018	1.05	1.17
July	85,040	6,400	1,340	2,743	.574	.66
August	92,810	14,000	1,120	2,994	.626	.72
September	95,590	7,400	1,540	3,186	.667	.74
Water year						

a No gage-height record; discharge computed on basis of records for other stations on the North branch of the Susquehanna River.

North Branch of Susquehanna River near Waverly, N. Y.

(Continued)

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,490	12,100	7,900	5,120	11,600	4,500	9,990	5,150	2,790	2,210	2,610	1,280
2	1,420	9,500	6,820	5,100	10,600	5,120	9,630	4,560	2,590	1,800	2,230	1,240
3	1,360	8,380	5,880	4,720	8,790	7,130	8,750	4,290	2,590	1,650	2,210	1,220
4	1,320	7,730	5,070	4,190	11,200	7,680	8,040	4,060	2,590	1,600	2,130	1,100
5	1,260	7,040	4,640	4,120	14,100	6,820	7,380	3,640	2,530	1,520	1,910	1,030
6	1,300	6,300	4,580	4,090	12,800	15,500	6,820	3,340	2,260	1,300	1,600	1,010
7	1,180	5,830	4,690	4,510	21,200	21,800	6,410	3,180	2,070	1,180	a1,400	1,050
8	1,180	5,400	4,610	6,150	30,800	16,000	6,540	3,040	1,920	1,120	a1,300	1,100
9	1,180	5,120	4,380	5,680	25,800	11,000	7,680	2,910	1,830	1,050	1,370	a1,200
10	1,170	5,120	3,760	4,880	25,100	8,640	11,500	2,890	1,760	990	1,420	1,230
11	1,210	4,990	a3,640	4,400	21,900	7,310	13,100	2,930	1,580	960	6,020	1,200
12	1,320	4,640	a3,500	4,170	15,900	6,850	17,300	2,950	1,530	931	15,900	1,140
13	1,440	8,640	a3,400	4,170	15,300	8,420	17,900	2,790	1,800	868	8,440	1,280
14	1,460	17,700	a3,300	4,040	21,900	17,500	16,000	2,710	3,360	877	5,060	1,860
15	1,460	17,900	a3,200	3,790	22,200	17,500	13,500	3,330	3,210	1,010	3,570	5,040
16	1,390	14,800	a3,400	3,280	17,200	15,400	11,600	6,440	2,590	1,050	2,810	6,920
17	1,330	11,400	a4,900	3,250	12,600	17,400	10,700	10,700	2,170	1,000	3,020	4,890
18	1,270	9,950	18,900	2,860	11,400	24,800	9,520	8,380	1,830	1,000	8,810	4,390
19	1,320	8,910	32,800	2,430	12,400	23,700	9,830	6,280	1,640	1,160	4,980	4,290
20	1,300	8,140	24,700	b2,400	13,400	21,600	11,200	5,150	1,460	1,190	4,610	4,640
21	1,670	7,590	17,000	b2,600	11,400	19,700	11,500	4,890	1,380	1,060	3,270	12,200
22	2,430	7,100	13,000	a2,600	9,670	18,800	10,600	5,180	1,250	1,080	2,570	44,900
23	21,000	6,540	11,500	a3,000	8,420	17,200	11,800	5,150	1,140	1,400	2,450	54,200
24	48,100	6,060	10,100	3,400	8,190	19,800	10,900	5,090	1,220	2,130	2,910	49,000
25	32,700	5,680	8,480	11,100	8,010	20,600	9,400	5,790	1,110	2,070	2,570	33,100
26	17,600	5,510	7,560	36,200	6,990	17,400	8,120	5,670	1,120	1,740	2,260	19,700
27	11,800	5,770	7,100	30,000	6,340	14,700	7,380	5,060	1,400	1,530	1,980	13,900
28	10,800	6,570	6,360	17,500	5,760	13,400	6,540	4,370	2,210	2,510	1,820	11,300
29	22,700	8,840	5,740	11,600		12,100	5,850	3,810	2,830	2,190	1,670	9,670
30	22,500	9,270	5,150	9,560		10,900	5,390	3,340	2,870	2,060	1,530	8,450
31	16,800		4,930	9,750		10,200		3,060		2,590	1,400	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	234,460	48,100	1,170	7,563	1.58	1.82
November	248,520	17,900	4,640	8,284	1.73	1.93
December	250,990	32,800	3,200	8,096	1.69	1.95
Calendar year						
January	220,660	36,200	2,400	7,118	1.49	1.72
February	400,970	30,800	5,760	14,320	3.00	3.12
March	439,470	24,800	4,500	14,180	2.97	3.42
April	300,870	17,900	5,390	10,030	2.10	2.34
May	140,130	10,700	2,710	4,520	.946	1.09
June	60,630	3,360	1,110	2,021	.423	.47
July	44,826	2,590	868	1,446	.303	.35
August	105,830	15,900	1,300	3,414	.714	.82
September	303,530	54,200	1,010	10,120	2.12	2.36
Water year 1937-38	2,750,886	54,200	868	7,537	1.58	21.39

a No gage-height record; discharge computed on basis of records for station upstream.
b Stage-discharge relation affected by ice.

North Branch of Susquehanna River near Waverly, N. Y.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a7,300	2,550	6,110	3,700	2,900	30,000	29,500	7,340	1,820	818	666	290
2	a6,500	2,400	5,820	3,810	3,100	28,600	29,100	6,390	1,700	770	550	290
3	a5,700	2,280	5,060	3,960	3,360	22,400	29,800	5,640	1,570	746	500	298
4	a4,950	2,190	9,190	3,760	3,270	18,700	25,100	5,060	1,420	710	510	387
5	a4,600	2,150	15,600	3,640	3,100	18,200	20,200	4,600	1,300	688	490	434
6	a4,150	2,150	29,600	4,360	3,100	22,900	18,400	4,270	1,220	655	570	351
7	a4,000	2,530	35,100	6,670	3,300	30,100	25,600	3,960	1,160	633	644	369
8	3,610	2,730	28,100	9,710	3,400	24,700	24,100	3,760	1,140	622	550	378
9	3,340	2,850	19,900	8,830	3,400	19,000	19,400	3,510	1,110	622	500	342
10	3,060	3,250	30,200	7,450	3,300	15,400	16,800	3,230	1,040	611	490	378
11	2,930	3,430	45,300	8,190	3,200	12,900	15,400	3,260	1,030	611	462	342
12	2,750	3,250	35,100	9,130	3,100	11,200	16,100	3,260	989	590	a414	369
13	2,650	2,950	26,000	8,270	3,300	10,500	16,800	3,080	1,110	580	a500	324
14	2,530	2,790	18,800	6,680	3,700	9,780	15,600	2,740	1,220	600	a390	298
15	2,340	2,750	14,900	5,450	8,690	9,260	17,900	2,540	1,220	560	a440	306
16	2,300	2,790	12,000	4,580	20,400	8,940	19,800	2,390	1,300	540	a460	306
17	2,150	2,770	10,100	4,700	21,500	9,260	16,700	2,280	1,300	490	a420	306
18	2,040	2,710	9,670	4,600	19,200	8,540	15,200	2,160	1,300	481	a387	315
19	1,980	3,690	9,320	4,200	17,700	7,300	15,500	2,060	1,180	481	351	315
20	2,000	11,000	8,680	3,900	42,600	6,630	15,900	1,950	1,110	550	351	298
21	2,060	13,200	7,790	3,690	71,100	6,360	15,000	1,900	1,080	540	324	298
22	2,260	11,000	6,850	3,500	60,900	6,160	13,900	1,870	1,050	452	342	290
23	2,340	8,870	5,760	2,700	39,800	5,900	13,600	1,940	1,070	396	351	281
24	2,260	7,710	5,270	3,200	24,900	7,200	12,300	2,350	963	378	351	264
25	2,530	6,820	5,270	3,000	18,100	13,500	11,100	2,760	926	424	378	272
26	3,340	5,920	4,800	2,900	15,700	28,400	10,100	2,500	902	452	369	272
27	4,030	5,200	4,700	2,800	21,500	44,500	9,220	2,180	878	452	324	351
28	3,450	5,400	4,100	2,700	25,900	49,500	9,740	1,950	878	481	333	472
29	3,270	5,600	3,700	2,900		41,500	9,020	1,870	830	959	360	490
30	2,990	5,890	3,900	3,000		31,400	8,300	1,760	830	854	315	580
31	2,730		3,600	2,900		32,700		1,780		688	306	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	102,140	7,300	1,980	3,295	0.689	0.79
November	138,820	13,200	2,150	4,627	.968	1.08
December	430,290	45,300	3,600	13,880	2.90	3.34
Calendar year 1938	2,688,166	54,200	868	7,365	1.54	20.90
January	148,880	9,710	2,700	4,803	1.00	1.15
February	453,520	71,100	2,900	16,200	3.39	3.53
March	591,430	49,500	5,900	19,080	3.99	4.60
April	515,780	29,800	8,300	17,190	3.60	4.02
May	96,340	7,340	1,760	3,108	.650	.75
June	34,646	1,820	830	1,155	.242	.27
July	18,434	959	378	595	.124	.14
August	13,398	666	306	432	.090	.10
September	10,266	580	264	342	.072	.08
Water year 1938-39	2,553,944	71,100	264	6,997	1.46	19.85

a No discharge record; discharge computed on basis of records for station upstream.
Note.- Stage-discharge relation affected by ice Dec. 26 to Jan. 1, Jan. 22 to Feb. 2, Feb. 5 to 14.

North Branch of Susquehanna River near Waverly, N. Y.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	611	2,860	938	b2,900	*b1,400	2,360	104,000	12,000	8,550	6,090	1,180	11,700
2	806	3,800	926	b2,600	b1,350	2,280	90,000	11,600	7,940	6,090	1,080	7,370
3	806	3,340	962	b2,450	b1,350	2,200	73,200	11,600	7,050	5,030	1,040	4,710
4	806	2,740	*1,330	b2,350	b1,350	2,380	68,000	10,800	5,960	6,150	974	3,910
5	688	2,200	2,130	b2,200	b1,350	4,030	77,300	10,300	5,230	9,000	890	2,760
6	688	1,870	2,870	2,050	b1,400	6,380	73,900	9,170	4,580	7,300	902	2,030
7	746	1,870	2,650	2,090	1,470	7,430	67,400	8,010	3,910	5,720	1,420	1,620
8	782	1,960	2,160	2,070	1,530	6,860	65,100	7,140	3,410	4,470	1,660	1,400
9	688	2,020	2,000	1,980	1,530	b6,000	80,700	6,410	3,090	3,630	1,410	1,270
10	580	2,260	1,890	*b1,950	1,670	b5,400	78,000	5,780	3,130	3,220	1,280	1,220
11	550	2,500	2,160	b1,900	1,770	b4,800	62,100	5,000	3,440	3,160	1,180	1,230
12	530	2,440	b2,600	b1,750	2,220	b4,300	45,500	4,580	3,410	3,250	1,050	1,260
13	500	2,610	2,670	1,620	3,340	b4,000	39,400	4,200	3,440	2,980	974	1,280
14	462	2,870	2,500	1,720	4,090	4,040	33,700	3,930	2,930	2,690	974	1,300
15	490	2,520	2,050	2,000	3,000	4,250	25,400	3,680	2,590	2,380	914	1,200
16	434	2,050	1,820	2,670	b2,800	b5,800	20,000	3,560	2,360	2,160	890	1,200
17	369	1,820	1,890	3,360	b2,900	b7,200	17,800	4,140	2,240	1,980	857	1,090
18	387	1,660	1,940	b3,500	b3,000	b7,200	17,000	4,740	2,050	1,740	846	1,050
19	369	1,640	2,050	b3,200	3,160	b8,200	21,500	4,520	1,890	1,660	791	998
20	405	1,640	3,700	b2,800	3,360	b10,600	28,500	6,020	1,750	1,590	748	926
21	396	1,610	*11,800	b2,500	b3,300	b11,200	48,400	7,020	1,640	1,500	780	926
22	510	1,300	13,000	b2,350	b3,100	b9,600	49,100	8,550	1,540	1,460	835	857
23	560	1,350	10,500	b2,200	*b2,900	b8,200	37,500	7,220	1,470	1,520	728	835
24	550	1,260	7,660	b2,100	b2,700	b6,800	30,100	5,660	2,320	1,400	706	835
25	590	1,220	5,690	b1,950	b2,600	*b6,200	25,500	4,850	3,020	1,340	748	998
26	633	1,140	b4,300	b1,800	b2,450	b5,800	22,600	6,680	3,160	1,300	686	1,700
27	644	1,040	*b3,400	b1,700	b2,350	b5,400	20,200	8,620	3,830	1,340	675	2,220
28	950	986	b3,000	b1,650	b2,300	b5,400	17,600	17,300	3,660	1,230	835	2,090
29	1,560	950	b3,000	b1,600	b2,350	6,120	15,200	14,100	4,120	1,170	902	1,910
30	1,920	902	b3,100	b1,500		19,600	13,300	9,780	4,390	1,300	926	1,580
31	1,760		b3,000	b1,450		80,000		9,030		1,300	1,140	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	21,770	1,920	369	702	0.147	0.17
November	58,628	3,800	902	1,954	.409	.46
December	109,686	13,000	926	3,538	.740	.85
Calendar year 1939	2,072,778	71,100	264	5,679	1.19	16.12
January	67,960	3,500	1,450	2,192	.459	.53
February	68,090	4,090	1,350	2,348	.491	.53
March	270,030	80,000	2,200	8,711	1.82	2.10
April	1,368,000	104,000	13,300	45,600	9.54	10.64
May	235,990	17,300	3,560	7,613	1.59	1.83
June	108,100	8,550	1,470	3,603	.754	.84
July	95,150	9,000	1,170	3,069	.642	.74
August	30,021	1,660	675	968	.203	.23
September	63,475	11,700	835	2,116	.443	.49
Water year 1939-40	2,496,900	104,000	369	6,822	1.43	19.41

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- Discharge for period of shifting control, June 17 to Sept. 30, computed on basis of seven discharge measurements, gage heights, and records for station at Vestal.

North Branch of Susquehanna River at Towanda, Pa.

Location.- Water-stage recorder, lat. 41°45'55", long. 76°26'25", at Bridge Street Bridge, at Towanda, Bradford County, 1 3/4 miles upstream from Towanda Creek. Datum of gage is 693.85 feet above mean sea level (unadjusted).

Drainage area.- 7,797 square miles.

Records available.- October 1918 to October 1920, October 1931 to September 1940 in reports of U. S. Geological Survey; December 1892 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 22 years (1918-40), 10,050 second-feet.

Extremes.- Maximum discharge during year, 176,000 second-feet Apr. 1 (gage height, 23.84 feet); minimum, 622 second-feet Oct. 19 (gage height, 0.06 foot).
1892-1940: Maximum discharge, 188,000 second-feet Mar. 19, 1936 (gage height, 25.03 feet); minimum, 379 second-feet Sept. 25, 1939 (gage height, -0.23 foot).
Maximum stage known prior to 1892, 25.0 feet Mar. 17, 1865 (discharge, about 188,000 second-feet).

Remarks.- Records good except those for period of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	952	3,600	1,300	3,900	1,800	2,900	172,000	17,400	17,400	8,700	2,280	12,000
2	1,030	5,560	1,300	3,500	1,750	2,900	135,000	16,900	17,900	9,100	1,930	9,680
3	1,300	4,880	1,340	3,200	1,700	3,000	105,000	17,400	14,900	7,500	1,700	5,930
4	1,210	4,080	2,590	3,000	1,700	3,000	112,000	16,400	11,600	8,920	1,550	4,880
5	1,090	3,340	5,560	2,900	1,750	3,500	130,000	16,400	9,500	13,200	1,450	3,650
6	940	2,930	5,040	2,800	1,800	5,000	106,000	14,600	8,100	10,400	1,380	2,710
7	940	2,890	4,420	2,650	1,900	10,000	90,300	12,400	6,700	8,100	1,620	2,160
8	892	3,150	3,780	2,700	1,950	10,200	86,800	10,900	5,740	6,310	2,180	1,840
9	928	3,440	3,520	2,600	2,000	8,200	113,000	9,700	5,210	5,210	1,950	1,630
10	1,240	3,890	3,340	2,500	2,200	7,000	103,000	9,100	5,040	4,420	1,770	1,560
11	1,450	3,840	3,340	2,400	2,600	6,400	79,600	7,900	5,560	4,280	1,630	1,580
12	1,160	3,680	4,720	2,300	2,800	6,000	62,900	7,100	6,320	4,280	1,450	1,630
13	1,030	3,650	4,220	2,200	4,000	5,400	62,900	6,500	7,900	4,060	1,380	1,630
14	928	3,860	3,970	2,200	6,400	5,200	47,600	5,930	6,120	3,760	1,330	1,630
15	834	3,570	3,570	2,500	5,800	5,200	36,400	5,740	4,880	3,340	1,240	1,530
16	800	3,100	3,050	3,500	4,500	7,300	29,600	5,380	4,220	3,030	1,240	1,680
17	681	2,770	2,980	4,300	3,700	9,200	26,600	5,930	3,780	2,820	1,160	1,630
18	641	2,510	3,030	4,500	3,600	10,000	24,800	6,700	3,470	2,490	1,160	1,660
19	632	2,380	3,120	4,100	3,700	12,000	30,200	6,500	3,170	2,360	1,100	1,600
20	650	2,300	3,920	3,700	3,900	23,000	37,800	9,750	2,910	2,220	1,040	1,420
21	641	2,240	16,200	3,300	4,200	27,200	66,900	16,400	2,680	2,080	1,000	1,390
22	670	2,140	18,900	3,000	4,200	24,200	69,300	14,200	2,490	2,010	1,080	1,340
23	776	1,950	14,900	2,800	3,900	17,400	54,900	11,900	2,360	2,040	1,030	1,330
24	744	1,820	10,400	2,700	3,600	13,200	46,900	9,300	3,650	2,810	904	1,330
25	800	1,720	7,500	2,600	3,400	10,900	39,900	7,900	7,100	4,000	928	1,520
26	868	1,630	6,120	2,400	3,300	10,200	34,400	12,300	6,310	2,910	916	3,770
27	916	1,530	5,210	2,300	3,100	9,900	30,200	16,400	6,500	2,470	857	4,420
28	1,120	1,400	4,110	2,200	3,000	8,700	26,600	26,300	5,930	2,260	1,010	3,630
29	1,810	1,340	3,890	2,100	3,000	9,180	22,400	26,900	6,310	2,160	1,550	3,170
30	3,220	1,320	4,250	2,000		38,000	19,400	17,400	6,700	2,470	2,120	2,660
31	2,860		4,170	1,900		134,000		15,400		2,820	1,800	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	33,753	3,220	632	1,089	0.140	0.16
November	86,510	5,560	1,320	2,884	.370	.41
December	163,760	18,900	1,300	5,283	.678	.78
Calendar year 1939	2,860,534	122,000	393	7,837	1.01	13.64
January	88,750	4,500	1,900	2,863	.367	.42
February	91,250	6,400	1,700	3,147	.404	.44
March	448,280	134,000	2,900	14,460	1.85	2.14
April	2,002,400	172,000	19,400	66,750	8.56	9.55
May	383,030	26,900	5,380	12,360	1.59	1.83
June	200,450	17,900	2,360	6,682	.857	.96
July	142,530	13,200	2,010	4,598	.590	.68
August	43,735	2,280	857	1,411	.181	.21
September	86,590	12,000	1,330	2,886	.370	.41
Water year 1939-40	3,771,038	172,000	632	10,303	1.32	17.99

Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 20.

North Branch of Susquehanna River at Wilkes-Barre, Pa.

Location.- Water-stage recorder, lat. 41°15'00", long. 75°53'10", at Market Street Bridge in Wilkes-Barre, Luzerne County, 1.6 miles upstream from Toby Creek. Datum of gage is 511.94 feet above mean sea level (unadjusted).

Drainage area.- 9,960 square miles.

Records available.- March 1899 to December 1913, October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; November 1890 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 41 years (1899-1940), 13,450 second-feet.

Extremes.- Maximum discharge during year, 212,000 second-feet Apr. 1 (gage height, 31.53 feet); minimum, 1,110 second-feet Oct. 20 (gage height, 1.17 feet).

1890-1940: Maximum discharge, 232,000 second-feet Mar. 20, 1936 (gage height, 33.07 feet); minimum, 617 second-feet Sept. 18, 1939 (gage height, 0.69 foot).

Maximum stage known, 33.1 feet, from floodmarks, Mar. 18, 1865 (discharge, about 232,000 second-feet).

Remarks.- Records good except those for periods of no gage-height record and those for period of ice effect, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,050	a8,200	2,050	5,410	b2,300	3,840	206,000	a22,000	21,000	8,440	3,730	12,200
2	2,200	a8,000	2,050	4,780	b2,150	3,730	199,000	a21,000	a23,000	9,970	3,510	20,100
3	2,200	7,850	2,190	3,730	b2,050	3,730	153,000	a20,000	a20,000	9,970	2,900	13,300
4	1,910	7,000	2,360	4,420	b2,000	4,300	138,000	a21,000	a17,000	8,440	2,530	8,740
5	2,040	5,930	2,690	3,620	b2,000	4,660	157,000	a20,000	a14,000	9,480	2,280	7,140
6	1,910	5,410	5,930	3,950	b2,050	5,280	151,000	a18,000	a12,000	12,900	2,180	5,670
7	1,790	5,160	5,800	3,510	b2,100	7,700	120,000	a16,000	a10,000	10,600	2,050	4,540
8	1,620	5,160	5,410	3,300	*b2,200	10,300	106,000	13,900	a8,800	8,740	1,980	3,730
9	1,550	5,160	4,660	3,000	2,360	10,600	126,000	12,900	7,850	7,280	2,280	3,510
10	1,540	5,040	4,180	3,400	2,530	9,660	137,000	11,900	8,140	6,190	2,620	3,300
11	1,500	5,280	4,180	3,200	2,900	8,740	113,000	11,200	7,280	5,410	2,360	3,200
12	1,700	5,280	3,950	3,000	3,620	8,140	85,400	9,970	7,140	5,670	2,200	3,000
13	1,910	4,910	4,910	b2,900	3,950	7,560	75,400	9,040	7,560	6,190	2,060	2,900
14	1,720	4,780	5,160	b2,900	5,230	7,140	66,300	8,440	9,040	5,540	1,950	2,710
15	1,520	4,780	4,540	b2,800	6,600	11,200	49,600	7,850	7,560	4,910	1,820	2,620
16	1,420	4,660	4,300	b2,900	6,060	11,200	38,000	7,560	6,190	4,420	1,760	2,530
17	1,360	4,300	3,840	b3,400	4,780	10,600	38,000	7,700	5,410	3,950	1,720	2,440
18	1,290	3,950	3,730	b4,400	4,540	11,600	29,400	8,440	4,910	3,730	1,710	2,530
19	1,220	3,510	3,840	b4,900	4,540	13,200	29,400	8,740	4,540	3,300	1,700	2,530
20	1,110	3,300	4,520	b4,700	4,910	19,800	39,500	8,440	4,300	3,100	1,640	2,440
21	1,190	3,200	9,590	b4,200	5,040	34,100	76,900	13,400	3,840	2,900	1,580	2,360
22	1,400	3,100	19,400	b4,000	5,160	28,900	90,600	17,400	3,620	2,800	1,460	2,200
23	1,420	3,100	18,800	b3,700	5,160	23,400	78,400	15,400	3,400	2,710	1,460	2,170
24	1,420	2,800	14,100	b3,500	4,910	17,800	60,200	13,200	3,510	2,710	1,480	2,080
25	1,390	2,710	11,900	b3,200	4,660	15,000	51,300	11,200	4,600	4,060	1,460	2,280
26	1,460	2,530	9,350	b3,000	4,420	13,200	42,400	11,700	8,140	5,040	1,490	2,620
27	1,700	2,440	7,000	b2,900	4,180	12,600	36,800	20,600	7,560	4,420	1,520	4,040
28	a2,300	2,360	5,800	b2,800	3,840	11,900	32,100	24,700	7,560	4,420	1,990	5,540
29	a4,500	2,200	4,910	b2,700	3,950	12,600	27,400	37,600	7,850	3,730	1,900	4,660
30	a4,300	2,100	4,780	b2,600		31,000	23,900	28,000	8,140	3,300	2,040	4,180
31	a5,200		5,040	b2,400		150,000		21,000		3,510	3,830	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	59,840	5,200	1,110	1,930	0.194	0.22
November	134,200	8,200	2,100	4,473	.449	.50
December	190,960	19,400	2,050	6,160	.618	.71
Calendar year 1939	3,694,435	129,000	625	10,120	1.02	13.80
January	109,220	5,410	2,400	3,523	.354	.41
February	110,190	6,600	2,000	3,800	.382	.41
March	523,480	150,000	3,730	16,890	1.70	1.95
April	2,577,000	206,000	23,900	85,900	8.62	9.62
May	478,280	37,600	7,560	15,430	1.55	1.79
June	263,940	23,000	3,400	8,798	.883	.99
July	177,830	12,900	2,710	5,736	.576	.66
August	65,190	3,830	1,460	2,103	.211	.24
September	141,260	20,100	2,080	4,709	.473	.53
Water year 1939-40	4,831,390	206,000	1,110	13,200	1.33	18.03

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations at Towanda and Danville.
b Stage-discharge relation affected by ice.

North Branch of Susquehanna River at Danville, Pa.

Location.- Water-stage recorder, lat. 40°57'25", long. 76°37'20", at highway bridge at Danville, Montour County, three-quarters of a mile upstream from Mahoning Creek. Datum of gage is 431.07 feet above mean sea level (unadjusted).

Drainage area.- 11,220 square miles.

Records available.- March 1899 to December 1913, October 1918 to September 1921, July 1932 to September 1940 in reports of U. S. Geological Survey; March 1899 to December 1903, March 1905 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 37 years (1899-1900, 1901-3, 1905-31, 1932-40), 15,160 second-feet.

Extremes.- Maximum discharge during year, 222,000 second-feet Apr. 2 (gage height, 25.25 feet); minimum, 1,110 second-feet Oct. 21 (gage height, 1.86 feet); minimum daily, 1,370 second-feet Oct. 21.

1899-1940: Maximum discharge, 250,000 second-feet Mar. 20, 1936; maximum gage height, 30.7 feet, from floodmarks, Mar. 9, 1904 (affected by ice); minimum discharge, 690 second-feet Sept. 20, 1939 (gage height, 1.61 feet).

Remarks.- Records good except those for period of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,530	6,680	2,470	4,050	2,700	4,500	205,000	26,600	24,700	9,380	3,980	12,800
2	2,050	9,070	2,450	5,280	2,600	4,400	219,000	24,000	28,600	9,380	4,150	23,500
3	2,640	9,070	2,500	4,900	2,500	4,500	187,000	22,800	26,600	10,900	3,730	20,900
4	2,850	9,070	2,770	4,600	2,400	4,700	149,000	22,800	23,400	10,500	3,080	13,300
5	2,400	7,950	2,900	4,800	2,300	5,000	157,000	22,200	19,200	8,950	2,700	9,590
6	2,370	7,300	3,260	4,400	2,250	5,400	168,000	21,500	15,300	11,900	2,480	7,910
7	2,250	6,680	6,470	4,500	2,300	7,000	141,000	19,800	13,300	13,300	2,450	6,540
8	2,120	6,270	6,470	4,000	2,350	9,500	118,000	17,500	11,200	10,700	2,320	5,240
9	1,930	6,070	5,880	3,700	2,400	12,000	129,000	15,900	9,810	8,740	2,190	5,060
10	1,800	5,880	5,120	3,500	2,500	13,000	146,000	14,800	9,810	7,510	2,370	4,870
11	1,780	5,880	4,750	3,800	2,800	12,200	132,000	13,300	9,380	6,540	2,760	4,690
12	1,700	6,070	4,750	3,600	3,100	11,500	102,000	12,300	8,530	6,730	2,510	4,150
13	1,720	5,880	4,400	3,400	3,500	9,760	84,400	10,900	8,530	7,120	2,370	3,800
14	2,090	5,680	5,680	3,300	4,500	10,200	80,400	9,810	9,160	6,920	2,290	3,630
15	1,930	5,490	5,490	3,200	5,600	21,100	63,300	9,160	10,000	5,980	2,110	3,360
16	1,760	5,490	5,120	3,100	7,000	18,700	50,700	8,950	8,320	5,420	1,960	3,240
17	1,610	5,120	4,750	3,100	6,400	14,500	40,600	8,950	7,120	4,870	1,880	3,110
18	1,530	4,750	4,400	3,400	5,400	16,500	36,700	8,950	6,160	4,510	1,830	2,960
19	1,450	4,400	4,220	*3,600	5,200	21,700	34,400	9,590	5,800	4,150	1,830	2,960
20	1,410	3,880	4,750	4,500	5,400	25,300	46,100	9,810	5,420	3,800	1,800	2,900
21	1,370	3,690	9,560	5,200	5,600	39,500	79,400	10,900	5,060	3,490	1,710	2,870
22	1,930	3,560	16,000	5,000	5,700	40,300	101,000	19,200	4,510	3,330	1,610	2,810
23	2,020	3,470	22,900	4,700	5,800	32,800	95,700	18,000	4,330	3,400	1,560	2,620
24	1,760	3,350	19,900	4,300	5,800	25,900	76,400	16,400	4,150	3,730	1,540	2,510
25	1,720	3,150	15,500	4,000	5,400	20,500	64,200	13,800	4,510	3,400	1,470	2,730
26	1,680	2,980	13,000	3,700	5,200	17,500	54,300	15,300	10,300	4,870	1,610	3,700
27	1,820	2,850	10,200	3,400	5,000	16,000	46,200	20,400	9,160	5,980	1,760	3,460
28	2,280	2,720	7,300	3,200	4,800	18,100	40,600	28,000	8,320	5,240	2,000	4,970
29	3,830	2,700	5,680	3,100	4,600	17,500	35,100	39,800	9,590	4,870	2,590	6,160
30	4,570	2,570	6,270	3,000		34,800	30,800	39,800	9,380	4,330	2,290	7,120
31	4,400		5,300	2,900		145,000		27,300		3,980	3,710	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	66,300	4,570	1,370	2,139	0.191	0.22
November	157,720	9,070	2,570	5,257	.469	.52
December	220,210	22,900	2,450	7,104	.633	.73
Calendar year 1939	4,267,902	133,000	722	11,690	1.04	14.15
January	121,230	5,280	2,900	3,911	.349	.40
February	121,100	7,000	2,250	4,176	.372	.40
March	639,360	145,000	4,400	20,620	1.84	2.12
April	2,913,300	219,000	30,800	97,110	8.66	9.66
May	558,520	39,800	8,950	18,020	1.61	1.85
June	329,650	28,600	4,150	10,990	.980	1.09
July	203,920	13,300	3,330	6,578	.586	.68
August	72,640	4,150	1,470	2,343	.204	.24
September	183,460	23,500	2,510	6,115	.545	.61
Water year 1939-40	5,587,410	219,000	1,370	15,270	1.36	18.52

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 3 to Mar. 10.

Susquehanna River at Sunbury, Pa.

Location.- Water-stage recorder, lat. 40°50'55", long. 76°48'20", at highway bridge at Sunbury, Northumberland County, 1 mile upstream from Shamokin Creek. Datum of gage is 419.00 feet above mean sea level (general adjustment of 1907).

Drainage area.- 18,300 square miles.

Records available.- October 1937 to September 1940 in reports of U. S. Geological Survey; August 1916 to September 1940 (prior to October 1937, gage heights only), in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 368,000 second-feet Apr. 1 (gage height, 20.14 feet); minimum, 1,990 second-feet Oct. 21 (gage height, 0.50 foot).

1916-40: Maximum discharge, 556,000 second-feet (revised) Mar. 19, 1936 (gage height, 26.85 feet, from floodmark), from rating curve extended above 360,000 second-feet; minimum, 1,220 second-feet Sept. 25-27, 1939 (gage height, 0.23 foot).

Maximum stage known prior to 1916, 22.5 feet in March 1865 (discharge not determined).

Remarks.- Records good except those for period of ice effect and those for periods of no gage-height record, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,660	13,300	3,860	5,340	4,820	8,700	354,000	38,800	40,300	15,800	7,480	27,000
2	4,780	16,100	3,800	5,760	4,600	8,400	348,000	36,000	44,800	16,300	7,020	30,000
3	4,840	14,600	3,750	5,680	4,480	8,600	270,000	34,600	41,800	17,500	6,250	26,800
4	4,840	13,300	4,140	5,360	4,460	11,000	232,000	34,000	37,400	18,000	5,360	18,600
5	4,080	11,600	4,420	5,380	4,390	22,600	266,000	33,300	31,400	15,400	4,660	13,500
6	3,600	10,700	5,360	5,420	4,380	21,400	266,000	32,000	26,800	15,800	4,240	11,000
7	3,600	10,000	8,250	5,460	4,480	23,200	209,000	29,400	23,200	18,000	4,190	9,060
8	3,300	9,390	8,980	5,660	4,530	28,100	174,000	26,800	20,200	15,400	3,970	7,550
9	3,100	9,300	8,500	5,530	4,810	26,200	212,000	24,400	19,200	12,800	3,700	6,740
10	2,800	9,300	7,780	5,680	5,140	25,000	229,000	23,800	19,200	11,000	3,600	6,390
11	2,710	9,750	7,100	5,700	5,230	22,000	190,000	22,000	18,600	9,660	3,970	7,940
12	2,670	10,000	6,950	5,640	6,000	20,800	146,000	20,200	17,400	9,480	a3,850	9,060
13	2,900	9,840	6,810	5,760	6,360	20,200	130,000	19,200	16,200	10,300	a3,700	7,780
14	3,000	9,390	7,780	5,760	6,980	17,500	121,000	18,000	16,300	11,100	a3,500	6,810
15	3,000	8,900	8,580	8,800	10,400	32,000	94,200	17,100	17,200	11,200	a3,400	6,180
16	2,630	8,660	8,100	8,550	11,600	30,700	73,800	17,100	14,800	9,480	a3,300	6,040
17	2,420	8,260	7,700	8,250	12,100	23,800	60,600	17,400	12,500	8,180	3,250	5,830
18	2,270	7,620	7,250	7,900	11,100	24,400	54,200	17,400	10,900	7,320	3,200	5,420
19	2,160	7,100	6,950	7,640	10,200	38,800	52,600	17,300	10,300	6,810	3,100	5,360
20	2,130	6,460	7,480	7,400	10,200	57,400	72,500	18,000	10,000	6,390	3,100	5,420
21	2,100	5,970	10,700	7,560	11,000	73,800	136,000	28,200	9,930	5,830	2,950	5,030
22	2,850	5,690	19,000	7,500	12,600	70,400	170,000	41,800	11,200	5,550	2,850	4,780
23	3,050	5,480	27,400	7,570	12,100	55,800	150,000	40,300	9,480	6,650	2,800	4,420
24	2,750	5,220	25,600	7,400	11,500	43,300	117,000	34,600	8,740	7,940	2,800	a4,200
25	2,630	4,900	18,700	6,830	10,700	34,600	95,900	30,000	8,660	7,480	2,710	a4,500
26	2,670	4,660	16,000	6,470	9,620	30,000	80,600	33,300	9,840	7,400	2,850	5,690
27	2,950	4,420	11,500	6,200	9,000	27,400	68,700	41,800	13,700	8,820	3,100	6,320
28	4,110	4,190	9,100	5,600	8,600	28,100	60,600	47,800	13,300	9,140	3,800	6,880
29	8,670	4,020	8,420	5,570	8,600	29,400	51,000	55,800	15,100	9,060	4,480	8,740
30	12,000	3,860	8,280	5,300		56,500	44,800	57,400	16,100	7,780	4,900	7,780
31	10,300		6,740	5,000		231,000		43,300		7,620	6,880	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	118,570	12,000	2,100	3,825	0.209	0.24
November	251,980	16,100	3,860	8,399	.459	.51
December	294,980	27,400	3,750	9,515	.520	.60
Calendar year 1939	6,885,100	180,000	1,220	18,860	1.03	13.99
January	197,670	8,800	5,000	6,376	.348	.40
February	229,980	12,600	4,380	7,930	.433	.47
March	1,151,100	231,000	8,400	37,130	2.03	2.34
April	4,529,500	354,000	44,800	151,000	8.25	9.21
May	951,100	57,400	17,100	30,680	1.68	1.93
June	564,550	44,800	8,660	18,820	1.03	1.15
July	329,190	18,000	5,550	10,620	.580	.67
August	124,960	7,480	2,710	4,030	.220	.25
September	280,820	30,000	4,200	9,361	.512	.57
Water year 1939-40	9,024,400	354,000	2,100	24,660	1.35	18.34

a No gage-height record; discharge computed on basis of two discharge measurements and records for other stations on Susquehanna River.

Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 4.

Susquehanna River at Harrisburg, Pa.

Location.- Water-stage recorder, lat. 40°15'10", long. 76°52'30", at Nagle Street, 500 feet upstream from sanitary dam; water-stage recorder at Market Street Bridge, 3,700 feet upstream from sanitary dam; and wire-weight gage at Walnut Street Bridge, 500 feet upstream from Market Street Bridge; in Harrisburg, Dauphin County. Datum of gages is 290.04 feet above mean sea level (general adjustment of 1929).

Drainage area.- 24,100 square miles.

Records available.- October 1890 to September 1940.

Average discharge.- 50 years, 34,520 second-feet.

Extremes.- Maximum discharge during year, 418,000 second-feet Apr. 2 (gage height, 19.75 feet at Nagle Street and 20.92 feet at Walnut Street); minimum, 2,860 second-feet Oct. 23 (gage height, 2.91 feet at Nagle Street and 2.92 feet at Walnut Street); minimum daily, 3,230 second-feet Oct. 23.

1890-1940: Maximum discharge, 740,000 second-feet Mar. 19, 1936 (gage height, 29.23 feet at Nagle Street and 30.33 feet at Walnut Street); minimum, 1,600 second-feet Nov. 29, 1930 (gage height, 2.48 feet at Nagle Street and 2.56 feet at Walnut Street).

Maximum stage known prior to 1890, 26.8 feet at Walnut Street June 2, 1889 (discharge, about 699,000 second-feet).

Remarks.- Records excellent except those for period of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,600	15,900	5,850	7,400	6,800	15,200	394,000	52,000	56,700	19,800	10,200	16,400
2	4,680	19,200	5,850	6,000	6,700	13,900	406,000	49,000	56,700	19,600	9,800	37,900
3	7,490	20,300	5,980	5,600	6,400	14,300	338,000	46,100	58,300	19,800	9,100	35,300
4	8,400	18,600	5,730	5,800	6,300	23,400	280,000	43,300	52,000	21,100	8,140	28,900
5	7,880	16,700	5,850	5,600	6,400	30,100	297,000	42,000	44,700	20,700	7,100	20,700
6	8,010	15,200	6,350	5,500	6,500	39,200	309,000	39,200	37,900	18,000	6,600	16,100
7	6,720	14,800	6,850	6,000	6,600	34,000	268,000	37,900	32,800	18,200	6,480	13,500
8	5,850	13,900	8,680	6,000	6,800	31,600	222,000	35,300	28,100	20,500	6,100	11,500
9	5,260	13,000	10,400	7,000	6,800	31,600	244,000	31,600	25,500	17,500	5,980	10,600
10	4,910	13,200	10,200	7,000	7,600	31,600	278,000	30,100	29,300	15,000	5,500	9,800
11	4,570	13,200	9,800	7,600	8,680	30,300	251,000	28,600	30,300	13,000	5,260	9,950
12	4,260	13,200	8,960	7,400	8,820	27,200	201,000	26,200	26,900	13,000	5,260	9,950
13	4,150	12,800	8,820	7,600	10,700	25,500	167,000	24,600	24,400	12,200	5,850	11,300
14	3,940	12,700	8,680	8,800	9,800	26,500	155,000	23,200	24,100	12,300	5,980	9,950
15	4,040	12,000	9,100	12,000	8,380	38,800	131,000	22,000	24,100	13,200	6,480	8,960
16	4,150	11,300	10,200	18,000	10,800	52,000	104,000	22,300	23,200	13,200	5,500	10,200
17	4,150	10,800	9,800	17,000	13,000	40,600	84,000	22,700	19,800	11,500	5,260	9,800
18	3,830	10,600	9,380	15,000	16,100	34,000	70,200	22,300	17,500	10,400	5,150	9,100
19	3,620	9,800	8,960	13,000	17,300	45,000	65,800	21,600	16,300	9,520	4,910	8,010
20	3,450	9,240	8,960	11,500	18,800	78,600	91,900	21,400	15,600	8,960	4,800	7,490
21	3,360	8,400	9,950	10,000	21,600	104,000	194,000	23,000	15,600	8,400	4,680	7,620
22	3,360	8,140	13,200	9,600	24,600	107,000	234,000	39,800	14,800	7,750	4,680	7,230
23	3,230	7,750	24,000	9,600	26,200	84,000	210,000	50,500	15,400	7,620	4,470	6,850
24	4,040	7,490	31,600	10,000	23,000	64,400	170,000	43,300	13,500	9,970	4,260	6,480
25	4,360	7,100	26,500	10,000	20,500	52,000	136,000	39,200	12,800	11,300	3,940	6,850
26	4,150	6,850	20,000	9,200	18,400	43,300	114,000	39,200	12,700	10,400	4,360	7,620
27	4,260	6,600	17,000	8,800	15,900	37,900	97,000	52,000	13,500	9,520	4,470	8,400
28	4,800	6,350	11,500	8,600	14,800	36,600	81,300	59,800	17,300	11,000	5,260	9,100
29	5,500	6,220	10,000	7,600	14,800	39,200	70,200	64,400	16,900	11,300	5,850	9,100
30	9,310	5,980	10,200	7,700		45,500	59,800	73,000	18,800	11,200	6,850	10,600
31	16,100		9,400	7,300		251,000		64,400		10,100	9,100	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	165,430	16,100	3,230	5,336	0.221	0.26
November	347,320	20,300	5,980	11,580	.480	.54
December	347,750	31,600	5,730	11,220	.466	.54
Calendar year 1939	9,403,150	194,000	1,970	25,760	1.07	14.52
January	278,200	18,000	5,500	8,974	.372	.43
February	369,080	26,200	6,300	12,730	.528	.57
March	1,528,300	251,000	13,900	49,300	2.05	2.36
April	5,723,200	406,000	59,800	190,800	7.92	8.83
May	1,190,000	73,000	21,400	38,390	1.59	1.84
June	795,500	58,300	12,700	26,520	1.10	1.23
July	416,040	21,100	7,620	13,420	.557	.64
August	187,370	10,200	3,940	6,044	.251	.29
September	375,260	37,900	6,480	12,510	.519	.58
Water year 1939-40	11,723,450	406,000	3,230	32,030	1.33	18.11

Note.- Stage-discharge relation affected by ice Dec. 26 to Feb. 10.

Susquehanna River at Marietta, Pa.

Location.- Water-stage recorder, lat. 40°03'15", long. 76°31'50", 420 feet upstream from Chickies Creek and 1 mile downstream from Marietta, Lancaster County. Datum of gage is 200.00 feet above mean sea level (general adjustment of 1929).

Drainage area.- 25,990 square miles.

Records available.- October 1931 to September 1940.

Extremes.- Maximum discharge during year, 432,000 second-feet Apr. 2 (gage height, 53.33 feet); minimum, 2,770 second-feet Oct. 24 (gage height, 31.76 feet); minimum daily, 3,490 second-feet Oct. 24.
1931-40: Maximum discharge, 787,000 second-feet Mar. 19, 1936 (gage height, 60.73 feet), from rating curve extended above 450,000 second-feet; minimum, 618 second-feet Sept. 26, 1932 (gage height, 30.89 feet), when York Haven power plant was shut down in order to obtain current-meter measurements at low water; minimum daily, 1,380 second-feet Sept. 26, 1932.
Maximum stage known prior to 1931, 58.3 feet, from floodmark, June 2, 1889 (discharge, about 700,000 second-feet).

Remarks.- Records excellent except those for period of ice effect, which are good. Flows below 8,000 second-feet regulated by Metropolitan Edison Co. plant at York Haven. Accuracy of the records for the entire period has been verified independently by Carroll F. Merriam of the Pennsylvania Water & Power Co. by comparison with records obtained at the Safe Harbor, Holtwood, and Conowingo power plants downstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,800	21,200	6,200	9,000	7,200	16,300	400,000	61,800	66,500	20,800	11,700	28,400
2	6,480	20,100	6,150	6,500	6,700	14,700	428,000	55,800	64,900	20,800	11,400	42,800
3	11,700	21,600	6,780	5,800	6,000	15,800	368,000	52,900	66,500	20,800	10,600	39,800
4	11,400	20,800	6,130	6,000	7,400	36,100	294,000	50,100	61,800	21,600	9,630	34,000
5	10,100	18,700	5,860	5,800	6,600	38,600	294,000	47,400	54,300	22,300	8,920	25,400
6	9,150	18,000	6,100	5,600	6,700	46,200	316,000	44,800	46,100	20,800	7,790	19,400
7	8,800	17,000	6,710	6,400	6,900	44,800	283,000	43,500	38,600	18,700	8,230	16,000
8	6,970	16,000	8,010	6,400	7,200	39,800	230,000	39,800	32,900	20,800	8,010	13,400
9	6,590	14,700	9,620	7,600	7,200	38,600	252,000	36,200	29,000	20,800	6,960	12,600
10	5,910	14,000	10,600	7,600	7,600	39,800	286,000	32,900	29,000	18,000	6,570	11,700
11	5,420	14,400	10,600	8,000	9,000	35,100	266,000	31,900	32,900	16,000	6,010	10,600
12	5,130	14,000	9,630	7,800	10,000	31,900	214,000	29,900	30,900	14,700	5,660	10,600
13	4,660	14,400	9,000	8,000	10,500	28,000	176,000	27,100	27,100	14,000	6,010	11,700
14	4,510	13,400	9,480	9,500	12,000	29,000	160,000	25,400	25,400	13,100	6,570	11,400
15	4,200	13,100	9,000	14,000	8,400	53,000	144,000	24,600	25,400	13,700	6,570	10,100
16	4,420	12,600	10,200	18,000	10,000	64,900	118,000	23,900	24,600	14,400	6,920	10,400
17	4,680	11,700	10,600	17,600	12,500	51,500	95,700	24,600	23,100	14,000	5,740	11,400
18	4,390	11,400	9,920	16,000	17,000	42,200	81,300	24,600	20,800	12,600	5,840	10,600
19	4,040	10,900	9,630	14,000	19,000	46,700	74,500	23,900	18,700	11,400	5,840	9,150
20	4,200	10,400	9,880	12,000	28,000	79,200	99,800	23,100	18,000	10,100	5,370	8,230
21	3,670	9,390	12,000	11,000	31,000	105,000	196,000	23,100	17,300	9,390	5,210	8,010
22	3,800	8,820	13,700	10,000	28,000	111,000	243,000	31,200	16,600	8,920	5,210	8,010
23	4,040	8,140	17,300	10,000	27,100	93,800	227,000	51,500	16,300	8,460	5,240	7,370
24	3,490	8,260	29,500	10,500	24,600	72,900	188,000	50,100	16,600	8,920	4,830	7,160
25	4,460	7,610	27,100	10,500	23,100	60,300	150,000	44,800	15,000	13,000	4,720	12,600
26	4,640	7,370	23,900	9,000	20,100	47,400	126,000	42,200	14,000	12,300	5,000	18,700
27	4,500	7,300	18,000	8,600	19,400	42,200	107,000	54,300	14,000	11,200	5,250	10,900
28	5,450	6,900	12,500	9,400	18,000	38,600	92,000	64,900	16,300	12,300	5,680	10,400
29	5,040	6,290	10,200	7,800	17,300	42,200	79,500	69,600	19,400	12,800	6,880	10,100
30	6,740	6,410	10,300	8,000		44,800	71,200	76,200	18,700	12,800	7,540	10,900
31	15,300		10,000	7,600		206,000		76,200		12,800	10,400	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	190,680	15,300	3,490	6,150	0.237	0.27
November	384,890	21,600	6,290	12,830	.494	.55
December	354,600	29,500	5,860	11,440	.440	.51
Calendar year 1939	10,261,970	205,000	2,090	28,120	1.08	14.68
January	294,000	18,000	5,600	9,484	.365	.42
February	414,500	31,000	6,000	14,290	.550	.59
March	1,656,400	206,000	14,700	53,430	2.06	2.37
April	6,060,000	428,000	71,200	202,000	7.77	8.67
May	1,308,300	76,200	23,100	42,200	1.62	1.87
June	900,700	66,500	14,000	30,020	1.16	1.29
July	462,290	22,300	8,460	14,910	.574	.66
August	216,300	11,700	4,720	6,977	.268	.31
September	451,830	42,800	7,160	15,060	.579	.65
Water year 1939-40	12,694,490	428,000	3,490	34,680	1.33	18.16

Note.- Stage-discharge relation affected by ice Dec. 27 to Feb. 21. Discharge for period of partial gage-height record, Mar. 31 to Apr. 2, computed on basis of partial record, one discharge measurement, and records for station at Harrisburg.

Tioga River at Tioga, Pa.

Location.- Water-stage recorder, lat. 41°54'30", long. 77°07'45", 150 feet upstream from highway bridge at Tioga, Tioga County, and three-quarters of a mile upstream from Crooked Creek.

Drainage area.- 282 square miles.

Records available.- June 1938 to September 1940.

Extremes.- 1938: Maximum discharge during period June to September, 5,340 second-feet June 27 (gage height, 6.62 feet); minimum, 16 second-feet Sept. 6 (gage height, 1.20 feet).
1938-39: Maximum discharge during water year, about 6,300 second-feet Feb. 20 (gage height, 6.99 feet); minimum, 5.6 second-feet Sept. 1 (gage height, 1.12 feet).
1939-40: Maximum discharge during water year, 16,200 second-feet Mar. 31 (gage height, 10.48 feet); minimum, 16 second-feet Aug. 25 (gage height, 1.16 feet).
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, that of Sept. 1, 1939.

Remarks.- Records good except those for periods of ice effect, which are fair.

Cooperation.- Records furnished by U. S. Geological Survey, Albany, N. Y.

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										201	48	20
2										192	48	20
3										150	44	20
4										115	36	19
5										94	32	18
6										80	30	17
7										68	27	19
8										61	25	22
9									86	56	25	21
10									74	58	27	19
11									70	56	55	19
12									76	68	46	20
13									123	54	35	29
14									97	50	30	39
15									72	50	25	72
16									61	46	23	58
17									54	40	22	45
18									52	40	328	45
19									48	54	140	46
20									46	48	78	46
21									42	40	54	148
22									39	95	45	486
23									54	76	36	426
24									74	56	32	235
25									50	51	29	147
26									320	48	25	106
27									3,000	106	23	86
28									1,020	58	22	76
29									454	51	21	67
30									276	63	20	59
31										52	20	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February						
March						
April						
May						
June 9-30	6,188	3,000	39	281	0.996	0.81
July	2,277	201	40	73.5	.261	.30
August	1,451	328	20	46.8	.166	.19
September	2,450	486	17	81.7	.290	.32
Water year 1937-38						

Tioga River at Tioga, Pa.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	34	122	92	74	1,640	d1,060	204	96	37	28	5.6
2	51	33	104	90	78	890	1,470	178	88	34	21	7.4
3	48	31	96	86	98	702	924	166	77	28	20	8.0
4	44	30	520	84	140	654	682	149	71	25	34	8.6
5	40	30	597	84	120	1,010	588	138	68	24	27	9.4
6	45	32	1,260	330	130	1,450	613	130	60	24	21	10
7	50	35	700	349	130	1,170	630	122	55	23	18	9.4
8	48	35	476	298	135	708	455	112	50	23	16	9.4
9	44	39	395	231	140	627	440	106	49	26	15	9.4
10	42	45	1,560	250	150	545	455	135	46	22	14	8.6
11	39	42	1,020	273	175	405	482	117	52	20	14	8.6
12	38	40	665	213	160	381	471	99	52	18	13	8.6
13	36	39	466	160	165	362	395	92	53	18	13	9.4
14	34	38	349	120	190	331	358	88	92	21	16	9.4
15	32	39	280	116	1,750	d461	504	81	73	20	15	8.0
16	31	36	240	125	1,650	d714	434	77	60	17	14	8.0
17	30	35	260	120	860	d426	371	73	52	16	12	10
18	29	39	206	110	700	d302	471	69	48	15	11	9.4
19	30	185	183	98	820	d260	471	66	46	14	10	9.4
20	31	636	164	88	4,600	d288	419	82	48	13	9.4	11
21	35	296	140	94	2,700	d308	353	192	52	12	9.4	14
22	38	216	130	86	1,140	d262	419	516	46	11	8.6	11
23	36	176	122	70	720	d253	367	699	42	10	8.0	10
24	34	144	130	84	580	d425	318	424	39	14	8.6	9.4
25	32	98	125	82	440	d810	289	298	35	16	11	9.4
26	31	114	114	80	470	d1,420	266	236	32	14	9.4	10
27	32	110	108	76	1,400	d1,560	254	201	30	13	8.0	34
28	35	106	96	72	1,300	d1,780	232	178	27	14	7.4	49
29	40	110	104	74		d1,280	247	155	27	15	7.4	32
30	38	118	96	80		d1,620	225	127	31	50	6.8	55
31	36		88	76		d1,480		108		44	6.2	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,185	56	29	38.2	0.135	0.16
November	2,961	636	30	98.7	.350	.39
December	10,916	1,560	88	352	1.25	1.44
Calendar year						
January	4,191	349	70	135	.479	.55
February	21,015	4,600	74	751	2.66	2.77
March	24,524	1,780	253	791	2.80	3.23
April	14,663	1,470	225	489	1.73	1.93
May	5,418	699	66	175	.621	.72
June	1,597	96	27	53.2	.189	.21
July	651	50	10	21.0	.074	.09
August	432.2	34	6.2	13.9	.049	.06
September	411.4	55	5.6	13.7	.049	.05
Water year 1938-39	87,964.6	4,600	5.6	241	.855	11.60

d Doubtful gage-height record; discharge computed on basis of record for station at Lindley.

Note.- Discharge for periods of backwater from aquatic growth, Oct. 14 to Nov. 19, June 18 to Sept. 30 computed on basis of gage heights, and records for station at Lindley.

Stage-discharge relation affected by ice Nov. 25 to Dec. 4, Dec. 21 to Jan. 6, Jan. 13 to Feb. 15, Mar. 19.

Tioga River at Tioga, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	c430	32	78	28	49	4,440	450	995	168	128	55
2	58	226	36	74	27	47	2,860	616	869	113	93	60
3	40	155	71	70	30	49	3,590	510	594	83	76	48
4	34	115	155	*66	33	84	6,710	654	445	74	62	47
5	28	110	109	64	36	240	3,830	593	349	65	52	40
6	30	140	86	62	39	330	2,360	450	281	58	53	34
7	30	140	75	60	41	270	2,130	392	233	52	64	30
8	46	130	77	58	43	240	3,780	349	217	47	52	30
9	117	122	80	56	41	210	4,030	392	208	44	40	45
10	68	103	*84	54	39	175	2,050	318	211	40	36	50
11	55	96	86	54	125	155	1,600	281	168	37	31	44
12	46	90	76	56	145	135	2,030	256	182	66	27	40
13	37	81	96	62	240	135	1,340	230	179	65	28	36
14	34	77	84	78	64	140	942	211	124	52	31	33
15	32	66	70	240	106	145	748	192	104	42	30	34
16	30	69	79	140	86	155	668	236	91	39	27	87
17	28	68	73	100	82	145	614	220	80	36	27	85
18	26	64	77	80	72	165	661	192	74	33	26	65
19	25	59	81	66	74	920	647	180	81	31	26	50
20	25	55	391	56	68	1,300	1,520	1,500	72	30	24	45
21	27	52	632	52	60	860	2,570	865	64	28	23	40
22	34	50	290	50	*54	660	1,750	582	60	28	20	37
23	34	49	205	48	52	410	1,550	455	58	232	19	36
24	32	44	160	44	50	350	1,480	383	94	389	18	33
25	31	43	140	41	49	300	1,210	443	138	212	17	59
26	c36	36	112	37	46	270	1,100	1,520	96	120	21	114
27	c42	35	88	35	44	250	933	959	91	91	26	74
28	c145	39	76	33	46	240	755	1,880	81	143	74	57
29	c140	36	88	*32	50	780	614	1,330	111	171	102	50
30	c90	34	94	32		6,400	510	849	108	604	69	44
31	c135		84	31		*9,690		1,080		217	55	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,636	145	25	52.8	0.187	0.22
November	2,814	430	34	93.8	.333	.37
December	3,887	632	32	125	.443	.51
Calendar year 1939	81,239.6	4,600	5.6	223	.791	10.71
January	2,009	240	31	64.8	.230	.27
February	1,870	240	27	64.5	.229	.25
March	25,299	9,690	47	816	2.89	3.33
April	59,022	6,710	510	1,967	6.98	7.79
May	18,568	1,880	180	599	2.12	2.44
June	6,458	995	58	215	.762	.85
July	3,410	604	28	110	.390	.45
August	1,377	128	17	44.4	.157	.18
September	1,502	114	30	50.1	.178	.20
Water year 1939-40	127,852	9,690	17	349	1.24	16.86

Peak discharge.- Mar. 30 (11 p.m.) 11,500 sec.-ft.; Mar. 31 (7 p.m.) 16,200 sec.-ft.; Apr. 4 (12:01 a.m.) 10,700 sec.-ft.

* Winter discharge measurement made on this day.

c Backwater from weeds and debris; discharge computed on basis of one discharge measurement, gage heights, appearance of recorder graph, and record for station at Lindley.

Note.- Stage-discharge relation affected by ice Nov. 15, 26, 27, Dec. 9, 11, 12, 14, 15, Dec. 22 to Mar. 30.

Mill Creek near Tioga, Pa.

Location.- Water-stage recorder, lat. 41°52'55", long. 77°07'15", 0.3 mile upstream from bridge on U. S. Highway 15, 0.4 mile upstream from mouth, and 2 3/4 miles upstream from Tioga, Tioga County.

Drainage area.- 76.4 square miles.

Records available.- June 1938 to August 1940 (discontinued).

Extremes.- 1938: Maximum discharge during period June to September, 1,060 second-feet June 27 (gage height, 4.18 feet); minimum, 1.7 second-feet Sept. 7 (gage height, 1.51 feet).
1938-39: Maximum discharge during water, 3,060 second-feet Feb. 20 (gage height, 5.79 feet), minimum, 1.2 second-feet July 18-22 (gage height, 1.26 feet).
1939-40: Maximum discharge during period October to August, 6,250 second-feet Mar. 31 (gage height, 7.65 feet), minimum, 3.2 second-feet July 20, 21 (gage height, 0.79 foot).
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, that of July 18-22, 1939.

Remarks.- Records fair.

Cooperation.- Records furnished by U. S. Geological Survey, Albany, N. Y.

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										57	8.5	2.3
2										52	7.8	2.0
3										39	a7.1	2.0
4										31	a4.9	2.3
5										24	a3.9	2.0
6										21	a3.5	2.0
7										17	3.1	2.3
8										15	2.7	4.9
9									21	13	3.1	3.5
10									17	13	3.1	2.7
11									17	14	21	2.7
12									19	21	13	3.1
13									29	13	7.8	5.9
14									22	10	a5.9	9.8
15									17	9.3	a5.4	32
16									13	8.5	a4.9	15
17									12	7.8	4.4	10
18									11	7.1	26	10
19									9.3	8.5	14	9.3
20									8.5	7.8	8.5	11
21									7.1	7.1	6.5	55
22									6.5	12	5.9	a160
23									21	9.3	5.4	a130
24									23	7.8	4.4	a65
25									12	5.9	3.9	a40
26									94	16	3.5	a28
27									680	42	3.1	a22
28									282	a13	2.7	a18
29									132	a12	2.7	a16
30									79	12	2.3	14
31										8.5	2.3	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February						
March						
April						
May						
June 9 - 30	1,532.4	680	6.5	69.7	0.912	0.75
July	534.6	57	5.9	17.2	.225	.26
August	201.3	26	2.3	6.49	.085	.10
September	682.8	160	2.0	22.8	.298	.33
Water year 1937-38						

a No gage height record; discharge computed on basis of records for station on Tioga Creek at Tioga.

Mill Creek near Tioga, Pa.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	7.8	30	20	20	460	248	41	14	5.5	3.2	1.4
2	12	7.1	23	20	22	197	314	36	13	5.0	2.4	1.7
3	10	7.1	21	19	26	161	185	32	12	4.0	2.8	2.4
4	9.3	7.1	175	19	39	159	134	29	11	3.6	11	2.4
5	9.3	7.1	179	18	38	285	120	25	9.9	3.2	7.0	2.4
6	11	7.8	291	90	35	375	130	24	8.7	3.2	4.0	2.4
7	12	7.8	160	74	35	253	129	22	7.5	2.8	2.8	2.0
8	10	7.8	110	65	40	137	92	20	7.0	2.8	2.4	2.0
9	10	9.3	91	50	43	127	90	18	6.5	2.8	2.0	2.0
10	9.3	10	393	57	49	118	105	21	6.0	2.4	2.0	2.0
11	8.5	9.3	231	68	54	82	107	18	7.5	2.0	1.7	2.0
12	7.8	7.8	162	50	50	80	109	16	7.0	1.7	1.4	2.0
13	7.1	7.8	117	40	39	78	88	14	9.8	1.4	1.7	2.0
14	6.5	7.8	83	35	47	67	77	14	20	1.7	2.0	2.0
15	6.5	6.5	70	30	a460	92	140	12	12	1.7	2.0	1.7
16	6.5	5.9	49	32	a300	168	103	12	14	1.4	1.7	1.7
17	5.9	5.9	52	31	a150	99	88	12	10	1.4	1.4	3.2
18	5.9	7.1	42	30	a120	60	127	10	9.3	1.2	1.4	2.8
19	5.4	80	37	28	242	52	98	9.3	8.1	1.2	1.4	2.4
20	6.5	145	34	27	2,170	79	103	15	9.3	1.2	1.4	2.4
21	7.8	70	32	28	683	88	84	38	14	1.2	1.4	2.8
22	8.5	50	30	26	248	66	88	83	9.9	1.2	1.4	2.4
23	8.5	40	28	23	154	71	77	90	8.7	1.4	1.4	2.0
24	7.1	32	31	22	127	150	63	73	8.1	2.4	1.7	1.7
25	6.5	26	30	20	105	251	55	49	7.0	2.0	3.2	1.7
26	6.5	24	27	18	129	428	49	38	6.0	2.0	2.4	2.0
27	7.1	26	26	16	369	415	46	32	5.0	1.7	2.0	14
28	8.5	23	21	16	350	414	44	30	4.5	1.7	1.7	11
29	8.5	25	22	18		317	53	27	5.0	2.4	1.4	6.0
30	8.5	27	21	21		488	45	21	5.5	12	1.4	18
31	8.5		19	20		380		17		6.0	1.4	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	258.5	13	5.4	8.34	0.109	0.13
November	705.0	145	5.9	23.5	.308	.34
December	2,637	393	19	85.1	1.11	1.28
Calendar year						
January	1,031	90	16	33.3	.436	.50
February	6,144	2,170	20	219	2.87	2.99
March	6,198	488	52	200	2.62	3.02
April	3,191	314	44	106	1.39	1.55
May	898.3	90	9.3	29.0	.380	.44
June	276.3	20	4.5	9.21	.121	.14
July	84.2	12	1.2	2.72	.036	.04
August	75.1	11	1.4	2.42	.032	.04
September	104.5	18	1.4	3.48	.046	.05
Water year 1938-39	21,602.9	2,170	1.2	59.2	.775	10.52

a No gage-height record; discharge computed on basis of records for station on Tioga Creek at Tioga.
Note.- Stage-discharge relation affected by ice Nov. 24 to Dec. 4, Dec. 16 to Jan. 6, and Jan. 13 to Feb. 14.

Mill Creek near Tioga, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	139	8.2	14	4.0	8.8	a1,700	88	227	44	21	
2	11	65	9.3	14	3.6	8.2	870	137	204	27	15	
3	8.1	44	23	13	4.0	10	1,170	109	135	21	12	
4	6.0	33	44	*12	5.0	32	a2,530	156	96	20	9.5	
5	5.0	32	31	11	6.0	70	a1,260	123	73	a16	7.5	
6	6.5	44	24	11	7.0	100	a600	96	57	a13	7.5	
7	6.5	44	23	10	8.6	80	462	82	44	a11		
8	12	36	27	11	9.8	68	1,070	70	40	a9.0		
9	52	29	c24	10	9.4	58	927	82	39	a8.0		
10	26	24	*c21	9.2	8.8	50	394	60	44	a7.0		
11	18	24	c29	9.4	70	44	301	50	33	a6.5		
12	14	23	c20	10	44	38	390	44	50	a15		
13	11	21	c25	11	54	34	240	37	56	a12		
14	9.9	19	c24	16	16	39	165	33	32	a8.0		
15	8.7	19	c19	88	25	45	127	32	25	a5.9		
16	7.5	16	c21	52	22	48	120	38	20	6.7		
17	7.0	15	c20	37	20	44	111	34	16	5.5		
18	6.5	14	c22	25	17	52	120	32	a12	4.3		
19	6.0	14	c23	a17	17	180	114	32	a12	3.5		
20	6.0	12	c135	a13	16	400	412	396	a12	3.5		
21	6.0	12	181	a10	13	280	541	206	a11	3.5		
22	8.1	12	86	a9.0	*12	215	401	126	a10	3.9		
23	7.5	12	66	a8.2	11	150	406	94	a10	83		
24	7.0	11	49	a7.4	11	116	371	76	39	70		
25	6.5	9.9	43	a6.6	10	98	298	77	48	31		
26	9.9	8.6	30	a5.6	9.8	88	254	308	27	20		
27	14	8.0	20	a5.2	9.2	82	207	183	24	17		
28	49	9.3	18	a4.8	8.8	78	158	305	23	26		
29	36	9.3	19	*a4.5	9.4	145	125	278	34	17		
30	24	8.7	18	4.0		1,450	101	166	27	85		
31	51		16	4.5		3,000		246		32		

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	467.7	52	5.0	15.1	0.198	0.23
November	767.8	139	8.0	25.6	.335	.37
December	1,118.5	181	8.2	36.1	.473	.55
Calendar year 1939	20,356.4	2,170	1.2	55.8	.730	9.92
January	463.4	88	4.0	14.9	.195	.22
February	461.4	70	3.6	15.9	.208	.22
March	7,111.0	3,000	8.2	229	3.00	3.46
April	15,945	a2,530	101	532	6.96	7.76
May	3,796	396	32	122	1.60	1.84
June	1,480	227	10	49.3	.645	.72
July	635.3	85	3.5	20.5	.268	.31
August 1-6	72.5	21	7.5	12.1	.158	.04
September						
Water year						

Peak discharge.- Mar. 31 (7 p.m.) 6,250 sec.-ft.; Apr. 4 (2 a.m.) 3,700 sec.-ft.
* Winter discharge measurement made on this day.
a No or faulty gage-height record; discharge computed on basis of four discharge measurements, range lines, weather records, and record for station on Tioga River at Tioga.
c Backwater from brush in channel; discharge computed on basis of one discharge measurement, notes by engineer and observer, appearance of recorder graph, record for station on Tioga River at Tioga.
Note.- Stage-discharge relation affected by ice Nov. 26, 27, Dec. 1, Dec. 23 to Mar. 31.

Cowanesque River at Nelson, Pa.

Location.- Water-stage recorder, lat. 41°58'25", long. 77°14'35", 50 feet downstream from Upper highway bridge at Nelson, Tioga County, and half a mile downstream from Thornbottom Creek.

Drainage area.- 286 square miles.

Records available.- June 1938 to September 1940.

Extremes.- 1938: Maximum discharge during period June to September, 3,780 second-feet June 27 (gage height, 5.85 feet); minimum, 2.5 second-feet Sept. 7 (gage height, 1.00 foot).
1938-39: Maximum discharge during water year, 11,400 second-feet Feb. 20 (gage height, 9.05 feet); minimum daily, 0.7 second-foot Aug. 31 to Sept. 4, Sept. 9.
1939-40: Maximum discharge during water year, 18,500 second-feet Mar. 31 (gage height, 11.17 feet); minimum daily, 7.0 second-feet Aug. 25.
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum daily, that of Aug. 31 to Sept. 4, Sept. 9, 1939.

Remarks.- Records good except those for periods of ice effect, those for period of incomplete gage heights, and those for periods of backwater from aquatic vegetation, all of which are fair.

Cooperation.- Records furnished by U. S. Geological Survey, Albany, N. Y.

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										184	23	4.1
2										164	23	3.8
3										125	21	3.5
4										95	17	4.4
5										77	14	3.5
6										62	13	2.7
7										54	13	3.8
8										46	11	5.2
9										40	9.7	5.2
10										43	8.5	4.8
11									52	42	50	5.6
12									73	56	56	5.2
13									190	46	29	12
14									194	36	22	105
15									99	35	16	683
16									73	33	13	180
17									58	29	10	102
18									52	26	9.7	95
19									44	26	9.1	77
20									40	23	8.5	64
21									36	39	8.5	121
22									33	46	13	248
23									29	30	13	545
24									29	50	11	228
25									27	40	9.7	142
26									131	85	7.9	104
27									2,140	49	6.9	81
28									730	33	6.9	69
29									394	27	6.0	56
30									252	22	5.2	50
31										23	4.4	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February						
March						
April						
May						
June 11-30	4,676	2,140	27	234	0.880	0.65
July	1,686	184	22	54.4	.205	.24
August	469.0	56	4.4	15.1	.057	.07
September	3,013.8	683	2.7	100	.376	.42
Water year 1937-38						

Cowanesque River at Nelson, Pa.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	17	125	52	62	1,280	829	107	28	14	10	0.7
2	39	17	88	56	64	584	972	93	25	15	9.0	.7
3	35	17	78	62	94	497	584	88	24	10	8.8	.7
4	31	16	560	60	130	513	431	79	21	8.4	17	.7
5	28	17	615	58	125	896	390	73	18	7.4	13	1.3
6	41	20	650	500	122	1,150	451	68	16	6.0	9.0	.8
7	74	20	413	394	125	739	440	64	14	5.6	7.0	.8
8	54	21	304	342	130	452	307	60	14	7.0	5.6	1.1
9	44	21	264	213	130	461	295	57	12	8.4	4.6	.7
10	38	22	508	288	140	422	311	66	13	7.4	3.4	.8
11	34	21	379	346	160	282	386	60	14	6.2	3.1	1.0
12	31	20	285	206	150	257	361	52	14	5.2	4.0	1.0
13	29	21	213	134	155	276	287	46	13	5.2	4.0	1.0
14	27	26	140	112	180	264	272	40	28	6.2	2.4	1.0
15	24	29	125	100	1,500	335	466	39	33	5.6	2.0	.8
16	24	26	116	110	1,260	542	340	35	28	5.4	1.8	.8
17	22	23	122	104	728	332	291	33	25	4.9	1.4	1.1
18	20	27	104	94	621	208	303	32	20	3.7	1.4	1.4
19	23	165	88	88	954	190	440	30	17	3.1	1.6	1.4
20	21	365	77	76	7,990	285	348	30	16	2.4	2.0	1.8
21	21	260	69	84	2,290	362	291	40	14	2.2	1.4	2.2
22	22	194	64	76	992	276	264	73	13	2.2	1.1	1.8
23	24	157	62	64	658	382	234	88	14	3.4	1.0	1.6
24	22	127	68	70	506	857	199	86	22	3.1	1.1	1.5
25	20	110	66	68	412	1,300	172	64	18	2.2	1.1	1.4
26	20	104	62	66	406	1,770	159	52	13	1.6	1.0	1.8
27	20	102	60	62	1,060	1,770	150	45	10	1.6	1.0	13
28	20	104	56	60	1,030	1,440	135	43	9.0	2.0	.9	60
29	21	107	54	62		1,020	150	41	8.4	2.2	.9	33
30	20	120	54	64		1,340	124	38	9.8	18	.8	36
31	18		52	64		1,120		32		14	.7	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	910	74	18	29.4	0.111	0.13
November	2,296	365	16	76.5	.288	.32
December	5,921	650	52	191	.718	.83
Calendar year						
January	4,135	500	52	133	.500	.58
February	22,174	7,990	62	792	2.98	3.10
March	21,602	1,770	190	697	2.62	3.02
April	10,382	972	124	346	1.30	1.45
May	1,754	107	30	56.6	.213	.25
June	524.2	33	8.4	17.5	.066	.07
July	189.6	18	1.6	6.12	.023	.03
August	122.1	17	.7	3.94	.015	.02
September	171.9	60	.7	5.73	.022	.02
Water year 1938-39	70,181.8	7,990	.7	192	.722	9.82

Cowanesque River at Nelson, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	169	31	44	15	27	5,780	281	343	118	20	25
2	61	121	34	41	14	27	2,960	374	462	83	17	24
3	38	95	521	39	15	29	3,760	312	270	79	15	19
4	28	79	721	*37	18	43	8,040	356	200	246	14	16
5	22	81	306	35	21	124	3,520	304	159	122	13	15
6	20	118	216	33	25	290	2,050	226	132	79	12	12
7	19	215	185	32	30	225	1,680	193	109	62	13	11
8	a80	344	316	32	35	195	3,070	171	96	47	13	11
9	a393	261	204	31	33	170	2,880	216	104	40	12	12
10	154	199	196	30	32	140	1,360	159	132	39	10	12
11	107	200	*357	30	86	116	1,020	137	94	46	9.2	12
12	86	159	149	31	145	104	3,010	124	216	72	8.4	12
13	58	129	179	35	260	100	1,250	109	142	64	9.2	14
14	45	113	172	50	98	100	799	100	91	46	11	12
15	38	97	110	220	68	102	609	100	72	34	14	14
16	31	102	124	130	76	104	591	124	63	29	12	30
17	27	88	118	74	60	100	492	112	49	25	10	44
18	25	77	150	52	54	108	720	100	43	24	9.8	28
19	22	70	141	40	56	280	716	96	44	25	9.2	21
20	21	62	379	33	50	1,180	1,260	908	40	22	8.4	17
21	23	54	462	31	*45	780	1,650	425	35	19	8.8	15
22	27	48	197	29	40	560	1,370	316	32	17	9.4	19
23	26	48	130	26	40	360	1,280	251	30	43	8.4	20
24	25	44	102	24	38	300	1,020	210	122	31	7.2	16
25	26	41	92	22	35	260	773	248	154	27	7.0	82
26	32	38	80	20	31	225	753	407	94	22	7.6	116
27	53	32	60	19	28	199	563	277	91	25	7.6	58
28	189	34	48	18	31	169	435	305	76	24	21	42
29	176	34	64	17	29	300	360	210	138	32	56	34
30	116	33	58	*16		4,950	304	165	94	32	36	27
31	109		50	16		10,700		260		26	28	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,226	a393	19	71.8	0.270	0.31
November	3,185	344	32	106	.398	.44
December	5,952	721	31	192	.722	.83
Calendar year 1939	72,417.8	7,990	.7	198	.744	10.12
January	1,287	220	16	41.5	.156	.18
February	1,508	260	14	52.0	.195	.21
March	22,367	10,700	27	722	2.71	3.12
April	54,075	8,040	304	1,802	6.77	7.55
May	7,576	908	96	244	.917	1.06
June	3,727	462	30	124	.466	.52
July	1,600	246	17	51.6	.194	.22
August	437.2	56	7.0	14.1	.053	.06
September	790	116	11	26.3	.099	.11
Water year 1939-40	104,730.2	10,700	7.0	286	1.08	14.61

Peak discharge.- Mar. 31 (9 p.m.) 18,500 sec.-ft.; Apr. 4 (2 a.m.) 13,600 sec.-ft.

* Winter discharge measurement made on this day.

a Incomplete gage-height record; discharge computed on basis of record for station on Troups Creek at Knoxville.

Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 26, Mar. 29. Discharge during period of backwater from aquatic vegetation, July 8 to Sept. 30, computed on basis of five discharge measurements (one made after Sept. 30, 1940), gage heights, and notes by engineers.

Troups Creek at Knoxville, Pa.

Location.- Water-stage recorder, lat. 41°58'05", long. 77°26'55", three-quarters of a mile upstream from Knoxville, Tioga County, and about 1 mile downstream from Crotch Run.

Drainage area.- 66.5 square miles.

Records available.- June 1938 to September 1940.

Extremes.- 1938: Maximum discharge during period June to September, 641 second-feet June 27 (gage height, 4.32 feet); minimum, 0.8 second-foot Sept. 4-6 (gage height, 1.68 feet).
1938-39: Maximum discharge during water year, 2,720 second-feet Feb. 20 (gage height, 7.00 feet); minimum daily, 0.2 second-foot Sept. 15-20, 22-25.
1939-40: Maximum discharge during water year, 5,530 second-feet Mar. 31 (gage height, 8.96 feet); minimum, 0.66 second-foot Aug. 11 (gage height, 1.55 feet).
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum daily, that of Sept. 15-20, 22-25, 1939.

Remarks.- Records good except those for periods of ice effect and those for periods of no or faulty gage-height record, all of which are poor.

Cooperation.- Records furnished by U. S. Geological Survey, Albany, N. Y.

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										14	2.7	1.3
2										14	2.9	1.3
3										11	2.5	1.2
4										8.2	2.3	.9
5										7.0	2.0	.9
6										6.0	1.7	.9
7										4.8	1.5	1.3
8										4.5	1.4	1.1
9									11	4.5	1.3	1.2
10									8.2	4.8	1.4	1.4
11									7.4	5.7	20	1.4
12									8.6	7.4	7.4	1.5
13									27	5.4	4.2	4.8
14									22	4.2	3.1	110
15									11	4.2	2.5	162
16									7.8	3.5	2.3	41
17									6.3	2.9	2.0	25
18									5.7	2.9	2.3	25
19									5.1	2.9	2.3	20
20									4.5	2.7	1.8	16
21									4.2	2.9	1.7	18
22									3.7	2.5	5.5	73
23									3.5	2.4	4.2	175
24									4.5	7.4	3.1	60
25									3.5	4.2	2.3	36
26									27	3.3	2.1	26
27									295	2.7	1.8	21
28									77	2.3	1.6	17
29									32	2.1	1.4	13
30									20	2.1	1.4	11
31										2.3	1.3	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February						
March						
April						
May						
June 9-30	595.0	295	3.5	27.0	0.406	0.33
July	154.8	14	2.1	4.99	.075	.08
August	94.0	20	1.3	3.03	.046	.05
September	868.2	175	.9	28.9	.435	.49
Water year 1937-38						

Troups Creek at Knoxville, Pa.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	3.5	30	10	16	282	206	23	4.3	a4.0	1.4	0.4
2	8.2	3.3	21	12	17	140	208	20	3.5	a3.5	2.0	.4
3	7.4	3.3	20	13	23	128	128	19	3.5	a2.5	2.4	.4
4	6.6	3.3	155	12	41	130	90	18	3.2	a2.2	3.2	.5
5	6.0	3.5	157	16	36	244	82	16	2.9	a2.1	2.9	.7
6	10	3.7	150	200	33	287	119	15	2.6	a2.0	2.2	.6
7	11	3.9	87	124	35	177	107	13	2.3	a1.8	1.7	.6
8	7.4	3.7	63	96	37	108	72	12	2.0	a1.5	1.2	.5
9	6.0	4.2	56	70	41	115	73	12	2.0	a1.6	1.1	.4
10	5.4	4.2	112	113	46	98	86	15	2.0	a1.4	.9	.5
11	4.8	3.9	76	94	66	76	124	12	2.3	1.4	.8	.4
12	4.5	3.7	58	49	56	66	108	9.2	2.6	1.2	.7	.4
13	4.2	3.9	41	33	45	68	77	7.5	3.2	1.3	.6	.3
14	4.2	6.0	32	27	54	70	70	7.5	9.2	1.1	.5	.3
15	3.9	5.2	27	25	440	96	142	7.0	7.0	a.9	.5	.2
16	3.9	4.5	20	28	270	119	92	6.0	9.8	a1.1	.5	.2
17	3.9	4.5	23	26	130	77	77	5.5	7.5	a1.0	.5	.2
18	3.9	7.0	20	24	a110	48	81	5.1	5.5	a1.0	.5	.2
19	3.9	55	17	22	a240	43	131	4.7	5.1	.9	.5	.2
20	3.9	76	14	20	1,860	70	98	3.9	4.7	.8	.5	.2
21	4.5	60	13	21	578	84	77	9.2	4.1	.8	.4	.3
22	5.2	52	11	19	223	70	66	15	3.5	.7	.4	.2
23	4.8	40	11	15	140	161	58	15	8.2	.7	.4	.2
24	4.5	28	14	16	106	328	45	17	7.8	.6	.4	.2
25	4.2	20	13	14	106	426	38	12	4.9	.6	.4	.2
26	3.9	17	12	12	97	514	36	8.6	3.5	.5	.4	.4
27	3.7	21	11	11	238	480	35	7.0	3.0	.8	.4	13
28	3.7	19	10	11	246	359	31	7.0	2.6	.8	.4	13
29	3.9	23	10	13		242	35	7.0	2.3	.6	.4	5.6
30	3.7	28	10	15		337	26	6.5	3.4	1.2	.4	28
31	3.5		10	16		276		5.1		.8	.4	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	164.1	11	3.5	5.29	0.080	0.09
November	514.3	76	3.3	17.1	.257	.29
December	1,304.0	157	10	42.1	.633	.73
Calendar year						
January	1,177	200	10	38.0	.571	.66
February	5,330	1,860	16	190	2.86	2.98
March	5,719	514	43	184	2.77	3.19
April	2,618	208	26	87.3	1.31	1.46
May	340.8	23	3.9	11.0	.165	.19
June	128.5	9.8	2.0	4.28	.064	.07
July	41.4	4.0	.5	1.34	.020	.02
August	29.0	3.2	.4	.94	.014	.02
September	68.7	28	.2	2.29	.034	.04
Water year 1938-39	17,434.8	1,860	.2	47.8	.719	9.74

a No gage height record; discharge computed on basis of records for stations on nearby streams.
Note.- Discharge for periods of backwater from debris, Oct. 6 to Nov. 18, Sept. 6 to 30, computed on basis of gage heights and records for stations on nearby streams.
Stage-discharge relation affected by ice Nov. 24 to 29, Dec. 2 to 4, 14 to 16, Dec. 28 to Jan. 6, Jan. 13 to Feb. 17, and Mar. 11 to 13.

Troups Creek at Knoxville, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	43	6.3	11	a1.4	5.0	a980	63	94	34	1.2	4.8
2	13	28	8.3	10	a1.3	5.0	637	98	99	18	1.1	3.8
3	8.3	23	207	9.8	a1.5	6.0	1,190	76	56	28	1.0	2.8
4	5.9	a18	159	*9.2	a2.0	25	1,980	84	35	59	1.0	2.2
5	4.9	a22	69	8.8	a3.5	60	806	65	25	22	.9	1.9
6	5.9	a40	50	8.2	a5.0	90	502	47	20	14	.9	1.6
7	5.7	*a97	54	7.9	a6.4	64	425	38	14	11	.9	1.5
8	63	117	103	8.4	a8.0	50	390	36	12	8.6	.8	1.6
9	149	79	58	7.4	a7.4	42	641	49	19	7.4	.8	2.5
10	50	62	76	6.2	*6.8	36	305	30	21	7.0	.8	2.2
11	42	67	*104	6.4	26	31	262	25	16	12	.7	2.0
12	27	43	42	6.8	42	27	226	22	19	32	.7	1.8
13	19	36	45	7.8	64	25	256	20	16	17	1.0	1.8
14	14	31	41	14	19	26	158	18	12	10	.9	1.6
15	12	28	26	50	25	25	135	17	8.8	7.6	.7	3.0
16	9.8	29	28	32	22	26	140	24	7.6	6.4	.8	16
17	8.0	23	33	22	18	27	120	20	6.2	5.6	.8	9.8
18	6.8	20	46	14	16	34	244	17	5.6	4.4	.8	6.2
19	5.9	18	40	7.8	14	240	177	13	6.0	3.7	.9	4.4
20	5.7	15	162	6.4	13	310	341	278	5.6	3.1	.8	3.7
21	5.7	13	92	6.0	11	200	385	91	4.6	2.8	.8	5.0
22	5.7	12	39	5.4	9.4	150	340	60	4.2	2.4	.9	12
23	5.7	11	31	a5.0	8.8	102	323	43	4.2	2.4	.9	6.6
24	5.5	9.8	28	a4.4	8.4	a72	239	34	59	2.5	.8	5.0
25	5.8	8.8	25	a4.0	7.8	a60	193	47	48	2.4	.8	53
26	17	7.8	19	a3.2	6.4	a50	187	76	25	2.1	1.0	27
27	26	6.3	13	a2.5	5.4	a43	132	52	30	1.9	1.1	16
28	76	7.6	14	a2.0	5.6	a40	98	46	27	1.7	13	12
29	45	7.3	15	a1.7	5.4	106	80	33	43	2.0	13	9.5
30	31	6.8	14	*a1.5		1,160	65	25	23	1.6	7.0	7.8
31	26		12	a1.5		2,720		48		1.3	5.0	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	737.0	149	4.9	23.8	0.358	0.41
November	929.4	117	6.3	31.0	.466	.52
December	1,659.6	207	6.3	53.5	.805	.93
Calendar year 1939	18,778.4	1,860	.2	51.4	.773	10.49
January	291.2	50	a1.5	9.39	.141	.15
February	370.5	64	a1.3	12.8	.192	.21
March	5,857.0	2,720	5.0	189	2.84	3.27
April	13,057	1,980	65	435	6.54	7.30
May	1,600	278	17	51.6	.776	.89
June	765.8	99	4.2	25.5	.383	.43
July	333.9	59	1.3	10.8	.162	.19
August	61.8	13	.7	1.99	.030	.03
September	229.1	53	1.5	7.64	.115	.13
Water year 1939-40	25,892.3	2,720	.7	70.7	1.06	14.47

Peak discharge.- Mar. 31 (6 p.m.) 5,530 sec.-ft.; Apr. 4 (4 p.m.) 3,380 sec.-ft.

* Winter discharge measurement made on this day.

a No or faulty gage-height record; discharge computed on basis of record for station on Cowanesque River at Nelson.

Note.- Stage-discharge relation affected by ice Dec. 12, 14-16, Dec. 22 to Mar. 30.

Towanda Creek near Monroeton, Pa.

Location.- Chain gage, lat. 41°42'35", long. 76°29'00", at highway bridge 1¼ miles upstream from South Branch of Towanda Creek and 1¼ miles southwest of Monroeton, Bradford County. Datum of gage is 774.14 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 214 square miles.

Records available.- October 1920 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; January 1914 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 22 years (1914-16, 1920-40), 281 second-feet.

Extremes.- Maximum discharge during year, 14,600 second-feet Mar. 30 (gage height, 10.0 feet, from graph based on gage readings), from rating curve extended above 5,100 second-feet; minimum discharge observed, 8.8 second-feet Aug. 25.
1914-40: Maximum discharge, about 15,800 second-feet Nov. 16, 1926 (gage height, 11.0 feet, from graph based on gage readings); minimum, 0.7 second-foot Sept. 15, 17, 21, 22, 1932.

Remarks.- Records fair except those for period of ice effect and those for period of no gage-height record, all of which are poor. Gage read twice daily. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	203	554	45	81	36	37	4,000	315	733	117	111	1,000
2	78	305	47	76	35	37	2,640	424	804	79	90	385
3	49	215	67	72	34	38	1,870	356	485	60	76	203
4	37	168	118	69	33	45	4,970	525	341	53	63	149
5	30	155	94	67	33	90	3,020	499	248	48	55	117
6	29	200	82	65	34	190	1,750	401	200	35	49	93
7	26	209	74	63	35	170	1,530	335	161	29	53	81
8	25	222	71	62	35	150	2,920	295	139	23	48	73
9	24	203	67	61	36	130	3,220	315	153	20	35	101
10	34	165	64	60	37	120	1,530	273	158	18	29	97
11	31	152	74	59	39	110	1,090	238	126	38	23	97
12	24	139	59	58	43	105	1,250	215	121	166	19	a91
13	22	128	68	58	60	100	885	202	126	92	18	a88
14	20	118	68	63	150	105	608	185	95	57	19	a92
15	17	110	67	300	110	150	499	179	83	37	18	a100
16	15	103	66	210	80	190	448	215	73	29	16	a94
17	15	95	61	150	64	160	424	258	60	24	14	95
18	14	88	64	*110	56	180	424	218	55	21	14	73
19	14	85	67	90	52	905	424	196	62	18	18	62
20	13	77	290	77	50	1,540	2,060	448	53	16	16	55
21	13	71	526	68	47	945	3,170	378	42	15	13	52
22	16	70	305	61	44	648	1,430	315	35	14	12	49
23	17	66	241	56	42	434	952	273	31	1,200	10	43
24	16	61	190	52	41	325	885	248	48	754	9.7	36
25	16	58	160	48	41	286	788	228	62	320	8.8	175
26	18	49	140	45	40	286	696	1,270	68	163	12	164
27	25	53	120	43	39	228	580	665	71	149	14	113
28	226	50	110	41	38	197	473	842	59	211	93	93
29	182	50	100	39	*37	403	424	665	92	144	121	74
30	118	48	93	38		6,240	356	408	90	440	73	68
31	198		86	37		10,200		899		163	170	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,565	226	13	50.5	0.236	0.27
November	4,067	554	48	136	.636	.71
December	3,684	526	45	119	.556	.64
Calendar year 1939	70,996.0	3,920	1.1	195	.911	12.35
January	2,379	300	37	76.7	.358	.41
February	1,421	150	33	49.0	.229	.25
March	24,744	10,200	37	798	3.73	4.30
April	45,316	4,970	356	1,511	7.06	7.88
May	12,283	1,270	179	396	1.85	2.13
June	4,874	804	31	162	.757	.85
July	4,553	1,200	14	147	.687	.79
August	1,320.5	170	8.8	42.6	.199	.23
September	4,033	1,000	36	134	.626	.70
Water year 1939-40	110,239.5	10,200	8.8	301	1.41	19.16

*Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 18.

Tunkhannock Creek at Dixon, Pa.

Location.- Water-stage recorder, lat. 41°33'30", long. 75°53'40", at highway bridge at Dixon, Wyoming County, 3 miles northeast of Tunkhannock and 4 miles upstream from mouth. Datum of gage is 610.50 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 383 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; January 1914 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 22 years (1918-40), 534 second-feet.

Extremes.- Maximum discharge during year, 20,300 second-feet Mar. 31 (gage height, 13.50 feet), from rating curve extended above 3,900 second-feet; minimum, 27 second-feet Aug. 25 (gage height, 1.11 feet).
1914-40: Maximum discharge, that of Mar. 31, 1940; minimum, 9.0 second-feet Aug. 12, 1930 (gage height, 0.73 foot).

Remarks.- Records good except those for period of backwater, those for period of ice effect, and those for extremely high stages, all of which are fair. Some regulation from storage in natural and artificial lakes and from operation of gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	575	1,400	106	160	69	130	7,470	484	369	329	57	1,260
2	163	798	111	140	68	125	3,920	548	506	260	50	572
3	118	563	228	130	68	120	3,610	518	368	196	44	329
4	130	436	327	120	68	150	5,840	530	286	169	42	230
5	104	394	265	115	72	450	4,820	474	234	153	39	169
6	89	538	224	110	76	430	2,960	393	196	125	37	134
7	85	608	201	105	*78	380	2,470	353	166	108	40	106
8	74	538	198	105	80	330	3,590	305	142	102	44	91
9	77	491	176	105	86	290	4,520	338	144	91	38	87
10	72	394	179	*100	94	270	2,520	286	153	81	35	91
11	67	350	214	100	110	240	1,810	247	136	108	33	111
12	63	305	177	100	160	220	1,760	230	125	410	32	93
13	51	280	173	105	300	220	1,670	210	115	364	31	87
14	52	249	170	110	240	300	1,360	200	102	214	32	72
15	46	214	135	250	210	2,100	1,150	200	83	156	32	63
16	43	218	156	200	190	1,580	1,070	230	85	125	33	63
17	41	198	165	140	180	1,150	934	243	85	113	33	59
18	40	185	198	120	170	1,060	990	207	75	99	31	54
19	47	176	207	110	180	1,860	1,010	185	70	89	31	53
20	43	167	724	100	180	2,480	2,880	186	72	83	31	53
21	44	153	1,510	93	*170	2,660	4,250	412	65	77	31	54
22	133	148	860	88	160	1,790	3,440	268	60	70	31	53
23	145	138	641	84	150	1,120	2,160	222	54	70	30	56
24	113	140	460	83	145	833	1,620	200	138	68	30	60
25	97	130	390	81	140	700	1,270	196	393	63	28	68
26	221	113	320	78	135	630	1,070	510	213	70	37	169
27	348	115	270	76	130	588	882	614	175	70	44	121
28	1,030	118	230	74	140	611	728	474	142	74	85	89
29	786	115	220	72	135	1,150	616	403	426	62	142	74
30	509	115	210	71		6,860	530	343	305	67	96	72
31	611		190	70		15,300		334		68	301	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,017	1,030	40	194	0.507	0.58
November	9,787	1,400	113	326	.851	.95
December	9,635	1,510	106	311	.812	.94
Calendar year 1939	167,261	5,040	17	431	1.13	15.28
January	3,395	250	70	110	.287	.33
February	3,984	300	68	137	.358	.39
March	46,127	15,300	120	1,488	3.89	4.48
April	72,920	7,470	530	2,431	6.35	7.08
May	10,343	614	185	334	.872	1.00
June	5,483	506	54	183	.478	.53
July	4,134	410	62	133	.347	.40
August	1,600	301	28	51.6	.135	.16
September	4,593	1,260	53	153	.399	.45
Water year 1939-40	178,018	15,300	28	486	1.27	17.29

Peak discharge.- Mar. 31 (4:30 a.m.) 20,300 sec.-ft.; Apr. 4 (5 a.m.) 6,910 sec.-ft.; Apr. 5 (12:45 a.m.) 6,910 sec.-ft.; Apr. 8 (11:45 p.m.) 5,840 sec.-ft.; Apr. 20 (6 a.m.) 5,170 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 15. Discharge for period of backwater from aquatic vegetation and leaves on control, Oct. 1 to Dec. 20, computed on basis of two discharge measurements, gage heights, and records for nearby stations.

Lackawanna River at Archbald, Pa.

Location.- Water-stage recorder, lat. 41°30'20", long. 75°32'30", in Archbald, Lackawanna County, half a mile upstream from White Oak Run and Gilmartin Street Bridge. Datum of gage is 889.17 feet above mean sea level (unadjusted).

Drainage area.- 108 square miles.

Records available.- January to September 1940.

Extremes.- Maximum discharge during period, 4,680 second-feet Mar. 31 (gage height, 7.36 feet); minimum, 17 second-feet Aug. 19 (gage height, 1.09 feet); minimum daily, 31 second-feet Aug. 25.

Remarks.- Records good except those for period of ice effect, which are fair. Some regulation from mine pumpage upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					b46	67	2,480	334	595	295	42	1,400
2					b34	56	1,560	342	640	212	41	653
3					b38	54	1,440	342	459	177	48	424
4					b34	84	1,970	368	346	155	41	317
5					b40	91	1,950	292	296	137	48	234
6					b57	82	1,440	284	242	133	65	179
7					b53	77	1,440	268	206	107	47	182
8					b58	76	1,920	200	196	108	44	133
9					62	70	2,280	184	207	110	43	119
10					61	72	1,820	144	138	108	36	144
11					78	75	1,060	166	134	123	37	128
12					75	66	1,100	150	123	260	46	112
13					100	81	921	130	116	185	49	99
14					108	105	748	129	104	123	45	97
15					74	288	711	130	113	111	39	103
16					75	170	693	122	97	98	35	70
17					71	160	663	127	90	90	34	74
18					56	204	663	127	87	84	36	73
19					72	288	669	100	96	78	42	64
20					76	360	912	131	a78	73	37	62
21					72	387	1,320	204	a72	61	33	65
22					74	324	1,060	161	a66	68	35	68
23					68	283	797	134	63	73	36	62
24					71	208	717	127	192	71	35	62
25					62	238	687	130	261	71	31	134
26					70	219	623	471	175	70	46	111
27				b58	68	210	544	517	148	70	40	80
28				b49	68	202	439	415	116	57	95	67
29				b58	70	244	400	312	385	66	72	60
30				b47		1,620	364	261	230	70	55	65
31				b44		3,500		261		49	543	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January 27-31	256	58	44	51.2	0.474	0.09
February	1,891	108	34	65.2	.604	.65
March	9,961	3,500	54	321	2.97	3.43
April	33,391	2,480	364	1,113	10.3	11.50
May	7,063	517	100	228	2.11	2.43
June	6,071	640	63	202	1.87	2.09
July	3,493	295	49	113	1.05	1.20
August	1,876	543	31	60.5	.560	.65
September	5,441	1,400	60	181	1.68	1.87
Water year						

Peak discharge.- Mar. 31 (12:30 a.m.) 4,680 sec.-ft.; Mar. 31 (6:30 p.m.) 3,960 sec.-ft.; Apr. 9 (12:30 a.m.) 2,740 sec.-ft.
a No gage-height record; discharge computed on basis of one discharge measurement and records for nearby stations.
b Stage-discharge relation affected by ice.

Lackawanna River at Old Forge, Pa.

Location.- Water-stage recorder, lat. 41°21'35", long. 75°44'40", 150 feet upstream from Delaware, Lackawanna & Western Railroad bridge in Old Forge, Lackawanna County, half a mile upstream from Ascension Brook. Datum of gage is 595.08 feet above mean sea level (unadjusted).

Drainage area.- 332 square miles.

Records available.- October 1938 to September 1940.

Extremes.- Maximum discharge during year, 21,600 second-feet Mar. 31 (gage height, 11.86 feet), from rating curve extended above 4,100 second-feet; minimum, 88 second-feet Oct. 19 (gage height, 2.06 feet); minimum daily, 106 second-feet Oct. 19.
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, 70 second-feet Sept. 17, 1939 (gage height, 1.95 feet); minimum daily, 85 second-feet Sept. 17, 1939.
Maximum stage known, about 17.0 feet July 28, 1934 (discharge not determined).

Remarks.- Records good except those for extremely high stages, which are fair. Flow regulated at low stages by mills and mine pumps upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	271	856	168	198	144	174	7,780	668	960	488	276	2,650
2	181	600	185	198	141	162	3,340	698	1,220	408	276	1,420
3	214	460	214	224	128	186	2,890	675	866	347	213	866
4	191	368	248	217	124	348	3,060	698	720	330	194	660
5	174	386	236	209	123	253	4,490	639	618	295	174	520
6	165	397	217	205	160	236	2,670	534	527	290	184	407
7	150	403	198	188	174	224	2,400	488	455	263	169	390
8	136	435	214	188	162	205	3,130	481	443	245	164	351
9	136	403	172	185	171	205	4,760	562	482	245	174	428
10	136	351	162	174	168	174	2,630	500	407	250	180	478
11	131	330	188	174	182	188	1,930	449	356	237	164	468
12	124	294	186	168	146	185	2,000	437	346	414	155	401
13	121	280	188	178	198	195	1,930	407	320	404	170	330
14	126	a270	198	201	189	287	1,520	395	300	290	172	295
15	110	a270	188	240	132	813	1,280	401	312	245	152	300
16	116	a270	174	221	156	487	1,220	407	330	229	148	254
17	131	258	165	185	165	428	1,090	419	281	213	164	238
18	120	253	188	168	174	528	1,160	407	268	205	158	225
19	106	217	198	191	165	765	1,130	384	276	194	161	217
20	121	205	598	174	191	1,000	1,950	390	271	191	149	205
21	160	205	929	141	181	1,140	3,110	569	250	188	137	217
22	201	198	668	150	165	937	2,540	500	254	170	143	229
23	191	198	494	168	165	750	1,810	455	237	194	149	198
24	165	178	368	165	162	593	1,520	413	372	191	152	198
25	162	181	325	165	145	542	1,280	419	494	220	143	307
26	228	165	325	147	148	487	1,090	934	401	232	180	348
27	291	165	262	150	165	528	958	1,060	356	274	148	263
28	814	168	244	147	153	690	834	924	328	250	341	233
29	538	178	258	134	171	810	742	810	656	194	263	205
30	374	171	266	146		6,330	690	682	490	330	200	198
31	554		228	148		15,800		653		352	1,000	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,638	814	106	214	0.645	0.74
November	9,113	856	165	304	.916	1.02
December	8,652	929	162	279	.840	.97
Calendar year 1939	169,719	3,720	85	465	1.40	19.00
January	5,547	240	134	179	.539	.62
February	4,648	198	123	160	.482	.52
March	35,650	15,800	162	1,150	3.46	3.99
April	66,934	7,780	690	2,231	6.72	7.50
May	17,458	1,060	384	563	1.70	1.96
June	13,596	1,220	237	453	1.36	1.52
July	8,378	488	170	270	.813	.94
August	6,453	1,000	137	208	.627	.72
September	13,499	2,650	198	450	1.36	1.51
Water year 1939-40	196,566	15,800	106	537	1.62	22.01

Peak discharge.- Mar. 31 (1:45 a.m.) 21,600 sec.-ft.; Apr. 5 (1 a.m.) 5,900 sec.-ft.; Apr. 9 (3:30 a.m.) 6,010 sec.-ft.
a No gage-height record; discharge computed on basis of range in stage shown by recorder graph and records for nearby stations.

Solomon Creek at Wilkes-Barre, Pa.

Location.- Water-stage recorder, lat. 41°13'35", long. 75°54'20", at Central Railroad of New Jersey bridge at southwest city limit of Wilkes-Barre, Luzerne County, 3¼ miles upstream from mouth. Datum of gage is 549.67 feet above mean sea level (unadjusted).

Drainage area.- 15.4 square miles.

Records available.- March to September 1940.

Extremes.- Maximum discharge during period, 2,740 second-feet Mar. 30 (gage height, 5.48 feet), from rating curve extended above 500 second-feet; minimum, 0.6 second-foot Aug. 16, 25 (gage height, 0.14 foot); minimum daily, 3.0 second-feet Aug. 25.

Maximum stage known, 11.4 feet, from floodmark, Sept. 16, 1933 (discharge not determined).

Remarks.- Records fair. Flow regulated at low stages by mine pumps upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							138	a23	31	8.9	a6.0	98
2							75	a27	26	9.6	a5.0	45
3							70	a24	25	7.5	a4.6	29
4							83	a21	20	8.0	a4.3	22
5							55	a18	18	7.2	a3.7	18
6							42	a16	15	6.2	a3.5	15
7							33	a15	15	7.6	a4.1	12
8							59	a14	13	6.4	a4.9	14
9							72	a16	17	10	6.9	17
10							48	a14	13	8.1	3.9	17
11							38	11	11	7.5	4.2	14
12							53	11	9.3	14	3.4	13
13							46	10	9.1	8.8	4.3	10
14							36	10	8.6	7.7	5.7	11
15							34	9.8	7.3	6.4	5.2	7.9
16							a32	12	5.3	7.1	4.7	9.3
17							a28	11	8.5	6.1	4.0	8.0
18							a36	10	7.8	6.8	4.4	5.5
19							a30	9.2	8.0	5.3	4.6	7.7
20							109	14	7.1	4.8	3.7	6.4
21							134	15	7.1	4.5	6.1	7.1
22							90	13	6.2	5.4	5.6	5.3
23						39	59	14	7.0	7.4	7.8	5.2
24						28	46	13	13	5.5	4.7	7.2
25						25	38	14	12	5.2	3.0	19
26						21	35	24	7.6	6.8	9.6	12
27						20	32	21	7.8	6.5	12	9.8
28						34	a29	21	14	6.0	10	8.4
29						47	a27	21	15	3.5	6.2	8.2
30						917	a25	19	10	8.1	4.9	10
31						570		18		a14	112	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February						
March 23-31	1,701	917	20	189	12.3	4.11
April	1,632	138	25	54.4	3.53	3.94
May	489.0	27	9.2	15.8	1.03	1.18
June	374.7	31	5.3	12.5	.812	.90
July	226.9	14	3.5	7.32	.475	.55
August	272.9	112	3.0	8.80	.571	.66
September	472.0	98	5.2	15.7	1.02	1.14
Water year						

Peak discharge.- Mar. 31 (10:30 p.m.) 2,740 sec.-ft.
a No gage-height record; discharge computed on basis of records for nearby stations.

Wapwallopen Creek near Wapwallopen, Pa.

Location.- Water-stage recorder, lat. 41°03'35", long. 76°05'25", at Harts Bridge, 2½ miles southeast of Wapwallopen, Luzerne County, and 3½ miles upstream from mouth. Datum of gage is 752.41 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 45.8 square miles.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1919 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 20 years (1920-40), 61.0 second-feet.

Extremes.- Maximum discharge during year, 2,840 second-feet Mar. 31 (gage height, 8.84 feet), from rating curve extended above 1,300 second-feet; minimum, 3.6 second-feet Aug. 23 (gage height, 0.69 foot); minimum daily, 4.1 second-feet Aug. 23.

1919-40: Maximum discharge, that of Mar. 31, 1940; minimum, 1.8 second-feet Sept. 1, 1936; minimum daily, 2.2 second-feet Sept. 19, 20, 1939.

Remarks.- Records good except those for periods of ice effect, which are poor. Some regulation at low stages from operation of gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	58	9.8	14	9.0	10	634	85	104	27	9.5	234
2	8.2	30	10	13	9.0	10	379	98	134	22	8.8	80
3	22	23	22	12	8.5	20	306	88	92	18	7.3	50
4	16	20	19	12	8.5	100	387	78	77	18	6.6	39
5	8.7	22	15	11	8.5	92	258	68	66	17	6.0	33
6	6.2	30	13	11	8.5	75	197	60	57	17	5.8	27
7	5.7	30	12	11	9.0	62	164	55	50	14	7.6	24
8	5.3	25	12	11	9.0	52	258	50	45	11	11	22
9	4.3	22	11	10	10	45	351	60	48	11	7.3	57
10	4.5	19	11	10	12	40	215	50	50	17	6.0	44
11	4.8	18	12	10	45	36	174	46	43	16	5.8	41
12	5.3	18	11	10	30	33	229	43	38	26	4.6	30
13	5.5	16	11	11	22	38	211	40	34	27	4.6	27
14	5.3	16	11	12	19	60	165	38	30	18	4.6	25
15	5.7	15	10	45	18	180	146	36	29	14	6.6	22
16	6.0	15	10	37	17	130	133	45	27	12	5.8	22
17	6.0	14	10	31	16	100	115	45	24	11	4.4	19
18	6.7	14	11	26	16	95	151	38	22	10	4.4	18
19	6.5	12	12	22	17	110	124	36	24	9.1	5.5	17
20	6.0	12	64	19	18	140	364	75	25	9.5	7.3	17
21	7.8	12	79	17	19	130	431	98	21	9.8	7.3	16
22	27	12	47	16	17	100	348	64	19	9.8	5.2	18
23	17	11	40	15	15	85	251	55	18	11	4.1	16
24	12	11	32	14	14	74	209	52	23	14	7.8	15
25	9.7	11	27	13	13	62	178	58	28	11	7.0	40
26	9.4	11	24	12	12	55	155	120	23	11	9.6	43
27	11	10	21	11	11	50	135	92	22	11	13	26
28	24	11	19	11	11	60	116	79	21	9.5	23	22
29	18	11	17	10	11	170	102	72	45	9.4	16	19
30	14	9.7	16	9.5		936	92	65	30	31	10	18
31	24		15	9.5		1,630		74		14	250	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	322.2	27	4.3	10.4	0.227	0.26
November	538.7	58	9.7	18.0	.393	.44
December	633.8	79	9.8	20.4	.445	.51
Calendar year 1939	17,495.1	394	2.2	47.9	1.05	14.21
January	476.0	45	9.5	15.4	.336	.39
February	433.0	45	8.5	14.9	.325	.35
March	4,780	1,630	10	154	3.36	3.88
April	6,978	634	92	233	5.09	5.67
May	1,963	120	36	63.3	1.38	1.59
June	1,269	134	18	42.3	.924	1.03
July	466.1	31	9.1	15.0	.328	.38
August	482.5	250	4.1	15.6	.341	.39
September	1,081	234	15	36.0	.786	.88
Water year 1939-40	19,423.3	1,630	4.1	53.1	1.16	15.77

Peak discharge.- Mar. 31 (1:40 a.m.) 2,840 sec.-ft.; Apr. 4 (2 a.m.) 486 sec.-ft.; Apr. 9 (1:30 a.m.) 500 sec.-ft.; Apr. 20 (2:30 p.m.) 559 sec.-ft.; Aug. 31 (8:30 p.m.) 620 sec.-ft.

Note.- Stage-discharge relation affected by ice Dec. 11-19, Dec. 23 to Mar. 29.

Fishing Creek near Bloomsburg, Pa.

Location.- Water-stage recorder, lat. 41°04'40", long. 76°26'00", at highway bridge 0.2 mile upstream from Deerlick Run, 0.9 mile west of Orangeville, and 5.5 miles northeast of Bloomsburg, Columbia County. Datum of gage is 540.68 feet above mean sea level (Reading Co. bench mark).

Drainage area.- 274 square miles.

Records available.- June 1938 to September 1940.

Extremes.- Maximum discharge during year, 18,100 second-feet Mar. 31 (gage height, 12.08 feet, from floodmark in gage well), by contracted-opening method; minimum, 16 second-feet Aug. 22 (gage height, 1.90 feet); minimum daily, 38 second-feet Aug. 18, 25.

1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, 7.6 second-feet July 19, 1939 (gage height, 1.71 feet); minimum daily, 18 second-feet July 22, 23, 1939.

Remarks.- Records good except those for periods of backwater from aquatic growth and those for periods of ice effect, all of which are fair. Flow regulated at low stages by mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	213	742	74	140	77	98	d5,490	481	860	254	96	2,490
2	125	528	78	130	75	94	d2,900	534	788	208	82	1,120
3	120	385	121	120	74	118	d2,280	504	656	178	76	675
4	125	304	186	110	74	971	4,210	458	558	161	56	481
5	99	285	148	106	75	920	3,400	418	481	154	60	375
6	78	359	124	100	77	712	2,190	370	413	115	67	299
7	84	285	109	95	79	570	1,790	333	348	78	84	254
8	76	258	104	92	81	435	3,820	309	309	92	78	220
9	78	254	99	91	84	380	6,340	364	294	78	69	567
10	76	220	96	90	100	333	3,230	333	323	92	60	458
11	62	208	106	90	431	290	2,120	290	276	201	53	422
12	54	193	99	92	221	273	2,120	272	245	407	45	328
13	54	171	95	98	181	316	1,800	262	212	398	56	290
14	52	154	94	110	144	885	1,300	245	182	233	49	245
15	48	141	86	388	162	4,350	1,020	237	161	175	45	212
16	46	126	86	345	135	1,430	860	290	158	138	43	216
17	46	132	86	260	135	774	735	385	141	121	42	208
18	42	121	96	200	132	1,090	868	323	129	106	38	182
19	40	118	106	160	130	2,210	911	285	138	102	42	161
20	38	106	299	130	142	2,050	3,230	299	132	89	43	141
21	56	92	711	120	162	1,510	4,620	343	138	76	42	138
22	135	99	498	110	139	1,070	2,680	300	102	80	39	141
23	97	94	396	100	130	683	1,670	276	92	148	39	132
24	80	92	313	93	123	539	1,270	262	115	309	39	126
25	68	89	270	90	118	460	1,010	302	201	182	38	274
26	80	80	230	87	111	427	852	1,920	171	178	46	434
27	116	78	200	84	100	457	720	1,670	161	249	60	299
28	309	80	180	82	104	695	628	1,420	154	190	224	237
29	318	76	170	80	108	874	558	1,220	476	145	212	201
30	245	71	160	79		8,050	510	928	323	129	148	178
31	324		150	78		d14,500		936		106	994	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,384	324	38	109	0.398	0.46
November	5,941	742	71	198	.723	.81
December	5,570	711	74	180	.657	.76
Calendar year 1939	123,744	2,920	18	339	1.24	16.80
January	3,949	388	78	127	.464	.54
February	3,704	431	74	128	.467	.50
March	47,564	14,500	94	1,534	5.60	6.46
April	65,132	5,490	510	2,171	7.92	8.84
May	16,569	1,920	237	534	1.95	2.25
June	8,737	860	92	291	1.06	1.19
July	5,172	407	76	167	.609	.70
August	3,065	994	38	98.9	.361	.42
September	11,504	2,490	126	383	1.40	1.56
Water year 1939-40	180,291	14,500	38	493	1.80	24.47

Peak discharge.- Mar. 15 (4 a.m.) 5,800 sec.-ft.; Mar. 31 (3 a.m.) 18,100 sec.-ft.; Apr. 4 (4 a.m.) 4,940 sec.-ft.; Apr. 9 (4 a.m.) 7,900 sec.-ft.; Apr. 20 (11 p.m.) 6,610 sec.-ft.
d Faulty gage-height record; discharge computed on basis of graph based on trend of recorder record and peak gage height as determined from floodmark.

Note.- Stage-discharge relation affected by ice Dec. 25 to Jan. 14, Jan. 17 to Feb. 10. Discharge for periods of backwater from aquatic vegetation, Oct. 1 to Dec. 20, May 26 to Sept. 30, computed on basis of seven discharge measurements, gage heights, and records for nearby stations.

West Branch of Susquehanna River at Bower, Pa.

Location.- Water-stage recorder, lat. 40°53'50", long. 78°40'40", at highway bridge at Bower, Clearfield County, 4.8 miles downstream from Mahaffey and Chest Creek. Datum of gage is 1,206.39 feet above mean sea level (general adjustment of 1907).

Drainage area.- 315 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1913 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 27 years, 553 second-feet.

Extremes.- Maximum discharge during year, 12,700 second-feet Mar. 31 (gage height, 14.05 feet); minimum, 16 second-feet Nov. 29 (gage height, 3.75 feet); minimum daily, 18 second-feet Oct. 19.
1913-40: Maximum discharge, 31,500 second-feet Mar. 18, 1936 (gage height, 19.74 feet, from floodmark in gage shelter), by slope-area method; minimum, 14 second-feet Aug. 29, 1939; minimum daily, 16 second-feet Sept. 29, Oct. 1, 6, 13, 1930; Aug. 29, Aug. 31 to Sept. 2, 1939.

Remarks.- Records good except those for periods of no gage-height record, which are fair, and those for period of ice effect, which are poor. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	80	43	66	49	150	6,600	440	353	1,510	101	137
2	39	78	40	64	48	150	3,370	540	402	942	84	82
3	30	66	58	62	47	200	2,590	462	290	610	76	64
4	29	54	74	60	48	500	3,920	423	a250	453	66	55
5	25	53	81	57	50	1,050	2,620	373	a200	330	63	49
6	25	62	71	55	*53	900	1,650	326	a167	248	58	44
7	26	78	59	54	60	700	1,240	304	a150	195	78	39
8	29	127	59	53	62	650	1,700	272	156	171	66	66
9	27	171	64	52	64	600	2,620	312	161	149	54	212
10	21	115	75	*52	72	500	1,780	319	180	127	49	129
11	21	89	91	51	90	430	1,360	272	136	238	45	131
12	19	82	99	50	120	*370	1,690	248	161	1,010	44	89
13	20	74	101	50	200	390	1,360	242	136	450	43	75
14	20	67	115	80	500	350	1,120	262	114	272	85	63
15	19	59	106	200	400	360	943	268	101	198	67	59
16	20	53	101	190	300	330	868	282	101	218	52	62
17	19	51	106	160	260	310	808	276	92	195	49	53
18	23	49	115	140	220	800	1,780	242	113	146	52	47
19	18	49	108	120	200	4,890	2,010	232	a1,200	127	74	42
20	20	47	228	110	190	3,250	4,700	1,090	a660	110	77	40
21	21	42	436	95	180	2,050	4,890	866	a430	94	57	39
22	29	42	276	85	170	1,560	3,620	615	a310	84	49	46
23	40	43	183	76	160	1,090	2,460	498	a240	112	47	51
24	31	42	140	70	160	832	1,780	427	a190	290	44	44
25	32	42	120	66	160	656	1,360	449	a192	245	46	103
26	44	40	105	62	155	545	1,060	449	a210	136	62	142
27	91	45	95	57	155	560	820	584	a193	125	89	86
28	358	45	86	54	150	1,590	645	462	186	454	97	67
29	186	37	80	52	150	2,650	545	369	734	264	75	57
30	97	40	75	51		7,750	476	312	628	167	62	51
31	76		70	50		12,200		342		127	81	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,512	358	18	48.8	0.155	0.18
November	1,922	171	37	64.1	.203	.23
December	3,460	436	40	112	.356	.41
Calendar year 1939	155,749	3,540	16	427	1.36	18.40
January	2,444	200	50	78.8	.250	.29
February	4,473	500	47	154	.489	.53
March	48,363	12,200	150	1,560	4.95	5.71
April	62,385	6,600	476	2,080	6.60	7.37
May	12,558	1,090	232	405	1.29	1.48
June	8,436	1,200	92	281	.892	1.00
July	9,797	1,510	84	316	1.00	1.16
August	1,992	101	43	64.3	.204	.24
September	2,224	212	39	74.1	.235	.26
Water year 1939-40	159,560	12,200	18	436	1.38	18.86

Peak discharge.- Mar. 19 (8 a.m.) 5,660 sec.-ft.; Mar. 31 (5:30 a.m.) 12,700 sec.-ft.; Apr. 4 (6 a.m.) 4,320 sec.-ft.; Apr. 20 (4 p.m.) 5,660 sec.-ft.
*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of two discharge measurements and records for stations downstream.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 18.

West Branch of Susquehanna River at Karthaus, Pa.

Location.- Chain gage, lat. 41°07'05", long. 78°06'35", at highway bridge at Karthaus, Clearfield County, just upstream from Mosquito Creek and 3.4 miles downstream from Moshannon Creek. Datum of gage is 830.31 feet above mean sea level (unadjusted).

Drainage area.- 1,462 square miles.

Records available.- February to September 1940 in reports of U. S. Geological Survey; October 1918 to September 1920 (gage heights only), February to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during period, 50,900 second-feet Apr. 1 (gage height, 12.4 feet, from graph based on gage readings); minimum discharge observed, 224 second-feet Aug. 24 (gage height, 0.82 foot).
1918-20, 1940: Maximum discharge, that of Apr. 1, 1940; minimum, that of Aug. 24, 1940.
Maximum stage known, 23.0 feet, from floodmark, Mar. 18, 1936 (discharge, about 135,000 second-feet).

Remarks.- Records fair except those for period of ice effect, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						b700	40,400	2,650	2,300	3,040	704	a410
2						b700	22,900	2,840	a2,510	4,190	572	a480
3						b740	16,300	3,040	2,470	3,040	484	530
4						b950	20,800	2,840	2,300	a2,400	a420	399
5						2,140	19,800	a2,400	1,980	1,980	385	322
6						3,250	13,100	2,140	1,760	1,680	360	276
7						2,650	16,000	1,980	1,610	a1,400	360	240
8						2,140	9,900	1,830	1,830	1,270	354	a240
9						1,980	14,300	1,680	a2,500	a1,080	322	1,900
10						a1,800	11,500	1,830	3,250	968	316	1,830
11						1,610	8,720	1,760	1,980	1,020	a270	1,340
12						1,340	8,720	a1,680	1,900	1,610	245	1,080
13						1,680	8,340	1,610	2,140	3,040	245	856
14						1,540	a6,800	1,610	1,680	a1,900	305	668
15						1,020	5,590	1,610	1,470	1,340	299	a660
16						1,080	4,450	1,680	a1,210	1,140	328	754
17						a960	3,940	1,610	1,080	1,080	299	856
18						1,340	4,450	1,610	1,080	1,020	a280	649
19						6,890	7,600	a1,550	1,760	856	288	522
20						12,700	11,100	2,760	3,940	754	335	440
21					b1,370	12,700	a19,000	5,700	2,470	a670	316	413
22					b1,200	7,240	18,300	4,450	1,830	613	294	a390
23					b1,040	5,290	13,100	3,700	a1,600	530	260	341
24					b940	a4,000	9,900	3,250	1,470	754	234	335
25					b860	3,250	7,600	3,040	1,470	1,020	a230	447
26					b780	2,840	6,220	a2,950	1,540	1,140	240	613
27					b740	2,470	5,000	2,840	1,470	910	282	622
28					b730	3,250	a4,000	2,470	1,400	a860	484	580
29					b720	6,220	3,250	2,300	1,900	a1,100	500	a480
30						19,800	2,840	a1,950	a2,400	1,470	469	399
31						44,600		1,980		1,080	385	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February 21-29	8,380	1,370	720	931	0.637	0.21
March	158,870	44,600	700	5,125	3.51	4.04
April	343,920	40,400	2,840	11,460	7.84	8.75
May	75,340	5,700	1,550	2,430	1.66	1.92
June	58,300	3,940	1,080	1,943	1.33	1.48
July	44,955	4,190	530	1,450	.992	1.14
August	10,865	704	230	350	.239	.28
September	19,072	1,900	240	636	.435	.49
Water year						

a No gage-height record; discharge computed on basis of records for stations at Bower and Renovo.
b Stage-discharge relation affected by ice.

West Branch of Susquehanna River at Renovo, Pa.

Location.- Water-stage recorder, lat. 41°18'50", long. 77°44'45", at highway bridge at Renovo, Clinton County, 1 mile upstream from Paddy Run. Datum of gage is 633.99 feet above mean sea level (unadjusted).

Drainage area.- 2,975 square miles.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; July 1895 to December 1903, October 1905 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 28 years (1908-15, 1919-40), 4,708 second-feet.

Extremes.- Maximum discharge during year, 92,900 second-feet Apr. 1 (gage height, 16.51 feet); minimum, 167 second-feet Oct. 20, 21 (gage height, -0.30 foot).
1895-1903, 1905-40: Maximum discharge, 236,000 second-feet Mar. 18, 1936 (gage height, 29.39 feet, from floodmark in gage shelter), by slope-area method; minimum, 80 second-feet Dec. 6, 1908 (gage height, -1.10 feet).
Maximum stage known prior to 1895, 27.3 feet, from floodmark, June 1, 1889 (discharge, about 211,000 second-feet).

Remarks.- Records good except those for period of no gage-height record and those for period of ice effect, all of which are poor.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	569	1,620	504	930	610	1,640	80,800	5,550	4,300	4,300	1,250	667
2	590	1,360	536	860	600	1,630	48,200	5,550	5,050	5,050	971	843
3	428	1,120	586	810	595	1,630	33,500	5,550	4,800	4,550	791	938
4	320	949	962	770	590	2,200	51,000	5,180	4,300	3,480	685	732
5	303	938	1,290	730	620	3,500	57,200	4,680	3,700	2,940	612	578
6	292	960	1,290	700	660	4,500	36,500	4,300	3,260	2,460	578	472
7	275	949	1,230	680	680	4,200	25,300	3,940	2,740	2,040	561	399
8	234	1,140	1,220	650	*690	3,700	25,600	3,590	3,370	1,760	595	392
9	297	1,810	1,180	650	730	3,350	41,400	3,590	3,370	1,580	536	1,980
10	827	1,960	1,080	635	820	3,100	29,900	3,590	3,610	1,440	465	3,480
11	a600	2,040	1,190	630	1,000	2,850	19,800	3,480	3,480	1,430	421	2,470
12	a470	1,960	1,360	625	1,300	2,600	22,000	3,260	3,370	1,850	378	1,790
13	a380	1,790	1,430	620	1,900	2,450	23,500	3,150	3,820	3,420	365	1,450
14	a320	1,650	1,630	780	3,000	2,400	16,300	3,040	3,150	2,800	435	1,200
15	a270	1,450	1,540	1,700	4,000	2,500	12,600	3,040	2,460	1,880	465	1,000
16	a240	1,300	1,420	1,600	3,500	2,400	10,100	3,040	2,200	1,560	428	938
17	a220	1,200	1,410	1,480	3,000	2,300	8,600	3,040	1,860	1,450	428	1,330
18	205	1,110	1,450	1,350	2,700	2,450	8,900	2,940	1,780	1,370	392	1,120
19	180	1,040	1,350	1,240	2,450	9,200	13,800	2,840	1,960	1,240	421	874
20	171	960	1,370	1,120	2,250	22,900	19,000	8,290	4,440	1,050	435	723
21	184	884	2,450	1,030	2,100	16,300	37,000	14,600	3,840	927	488	667
22	234	822	2,840	960	1,950	12,200	32,800	11,800	2,550	832	449	658
23	308	781	3,150	900	1,850	9,500	23,500	9,200	2,040	896	406	639
24	385	742	2,550	850	1,800	7,700	17,300	7,700	1,890	971	359	578
25	372	676	1,900	800	1,750	6,420	13,800	6,950	2,040	1,240	320	639
26	352	630	1,700	750	1,700	5,550	11,400	6,680	2,200	1,500	359	1,210
27	631	544	1,500	710	1,680	5,050	9,500	6,180	2,200	1,490	419	1,200
28	5,260	552	1,350	680	1,670	5,180	8,000	5,550	2,200	1,370	684	1,030
29	3,490	595	1,200	660	1,650	7,600	6,950	5,300	2,740	1,780	993	874
30	2,640	511	1,100	640		25,500	6,050	4,550	3,820	2,370	852	732
31	1,960		1,000	620		84,800		4,180		1,720	694	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	23,007	5,260	171	742	0.249	0.29
November	34,043	2,040	511	1,135	.382	.43
December	44,768	3,150	504	1,444	.485	.56
Calendar year 1939	1,214,741	26,100	96	3,328	1.12	15.19
January	27,160	1,700	620	876	.294	.34
February	47,845	4,000	590	1,650	.555	.60
March	267,300	84,800	1,630	8,623	2.90	3.34
April	750,300	80,800	6,050	25,010	8.41	9.38
May	164,330	14,600	2,840	5,301	1.78	2.05
June	92,540	5,050	1,780	3,085	1.04	1.16
July	62,746	5,050	832	2,024	.680	.78
August	17,215	1,250	320	555	.187	.22
September	31,603	3,480	392	1,053	.354	.40
Water year 1939-40	1,562,857	84,800	171	4,270	1.44	19.54

Peak discharge.- Apr. 1 (4 a.m.) 92,900 sec.-ft.; Apr. 5 (5 a.m.) 63,800 sec.-ft.; Apr. 9 (11 a.m.) 43,800 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations at Bower and Williamsport.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 19.

West Branch of Susquehanna River at Williamsport, Pa.

Location.- Water-stage recorder, lat. 41°14'15", long. 76°59'55", at highway bridge at Williamsport, Lycoming County, 350 feet upstream from Hageman Run. Datum of gage is 494.74 feet above mean sea level (general adjustment of 1929).

Drainage area.- 5,682 square miles.

Records available.- March 1895 to December 1913, October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; March 1895 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 45 years, 8,810 second-feet.

Extremes.- Maximum discharge during year, 146,000 second-feet Apr. 1 (gage height, 22.73 feet); minimum, 500 second-feet Oct. 21 (gage height, 0.00 foot).
1895-1940: Maximum discharge, 264,000 second-feet Mar. 18,1936 (gage height, 33.57 feet, from floodmark in gage shelter), by slope-area method; minimum, 231 second-feet Sept. 12, 13, 1932; minimum daily, 250 second-feet June 30, July 10, 1912.
Maximum stage known prior to 1895, 32.4 feet June 1, 1889 (discharge, about 252,000 second-feet).

Remarks.- Records good except those for periods of ice effect and those for period of doubtful gage-height record, all of which are poor. Slight regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,880	4,700	934	1,700	1,100	2,300	142,000	11,500	12,500	5,940	2,650	7,160
2	1,630	3,950	899	1,600	1,050	2,300	104,000	11,100	13,200	6,180	1,990	2,940
3	1,330	2,940	958	1,500	1,000	2,360	69,200	11,100	12,500	6,680	1,640	2,050
4	1,070	2,340	1,010	1,400	990	3,330	86,000	10,500	11,100	5,810	1,410	1,830
5	888	2,070	1,600	1,300	1,000	4,570	109,000	9,800	9,500	4,810	1,270	1,570
6	778	1,950	1,950	1,250	1,050	6,060	83,000	8,900	8,300	4,190	1,160	1,300
7	701	1,950	1,880	1,200	1,100	7,360	57,800	8,150	7,100	3,510	1,080	1,100
8	701	2,000	1,630	1,150	1,200	7,060	53,700	7,700	6,680	3,010	1,080	980
9	680	2,120	1,660	1,150	1,280	6,340	84,800	7,550	7,850	2,630	1,050	980
10	680	2,830	1,690	1,100	1,290	5,920	72,000	7,550	7,700	2,380	1,050	1,840
11	734	2,940	1,660	1,100	1,480	5,500	47,200	6,960	7,250	2,240	956	4,310
12	970	2,940	1,690	1,100	1,720	4,960	39,200	6,680	6,560	2,500	882	3,190
13	822	2,830	1,900	1,100	2,380	4,440	45,400	6,310	6,440	3,190	882	2,420
14	680	2,630	2,000	1,800	3,340	4,440	36,200	6,180	6,310	4,440	1,000	1,970
15	610	2,440	2,180	2,600	6,230	5,780	26,800	6,060	5,310	3,730	980	1,670
16	590	2,160	2,180	2,600	5,230	4,960	21,400	6,180	4,560	2,790	934	1,610
17	554	1,900	2,000	*2,300	4,190	4,440	17,800	6,440	3,960	2,360	903	1,550
18	554	1,800	1,880	2,200	3,600	5,310	15,800	6,060	3,510	2,190	882	1,670
19	545	1,660	1,950	2,050	3,300	12,600	18,200	5,810	3,730	2,030	872	1,720
20	518	1,560	2,140	1,900	3,100	36,500	27,500	9,690	3,840	1,890	810	1,400
21	536	1,480	3,260	1,800	2,900	30,800	56,800	22,800	5,940	1,680	820	1,230
22	554	1,390	4,320	1,700	2,700	23,400	59,500	23,800	5,060	1,580	800	1,130
23	600	1,290	4,440	1,650	2,600	18,000	46,100	18,600	3,840	1,630	800	1,070
24	630	1,240	4,070	1,600	2,500	d14,000	35,600	15,500	3,510	2,840	780	1,030
25	670	1,190	3,600	1,550	2,500	d12,000	28,400	13,900	3,620	2,290	750	1,140
26	756	1,110	3,370	1,500	2,400	d10,000	23,800	17,000	3,840	2,200	770	1,540
27	877	1,020	2,850	1,400	2,400	d9,000	20,000	18,200	3,960	2,890	840	1,780
28	2,020	946	2,600	1,350	2,350	8,730	17,000	16,200	3,840	3,110	1,210	1,970
29	6,820	910	2,300	1,250	2,350	10,700	14,700	15,100	4,940	2,550	1,610	1,600
30	4,830	958	2,100	1,200		27,800	12,800	12,800	5,180	2,790	1,730	1,400
31	4,070		1,900	1,150		119,000		12,200		3,300	1,980	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	39,278	6,820	518	1,267	0.223	0.26
November	61,244	4,700	910	2,041	.359	.40
December	68,581	4,440	899	2,212	.389	.45
Calendar year 1939	2,153,048	46,100	378	5,899	1.04	14.12
January	48,050	2,600	1,100	1,550	.273	.31
February	68,330	6,230	990	2,356	.415	.45
March	419,960	119,000	2,300	13,550	2.38	2.75
April	1,471,700	142,000	12,800	49,060	8.63	9.63
May	345,320	23,800	5,810	11,140	1.96	2.26
June	191,630	13,200	3,510	6,388	1.12	1.25
July	99,360	6,680	1,580	3,205	.564	.65
August	35,571	2,650	750	1,147	.202	.23
September	57,150	7,160	980	1,905	.335	.37
Water year 1939-40	2,906,174	142,000	518	7,940	1.40	19.01

Peak discharge.- Apr. 1 (4 a.m.) 146,000 sec.-ft.; Apr. 5 (10 a.m.) 112,000 sec.-ft.; Apr. 9 (4 p.m.) 89,900 sec.-ft.; Apr. 21 (11:30 p.m.) 64,000 sec.-ft.
* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of records for stations upstream.
Note.- Stage-discharge relation affected by ice Dec. 28 to Feb. 8, Feb. 18 to Mar. 2.

West Branch of Susquehanna River at Lewisburg, Pa.

Location.- Water-stage recorder, lat. 40°58'05", long. 76°52'25", at Market Street Bridge, at Lewisburg, Union County, 0.2 mile downstream from Buffalo Creek and 7.4 miles upstream from mouth. Datum of gage is 427.74 feet above mean sea level (unadjusted). Dec. 7, 1939, to July 2, 1940, wire-weight gage at same site and datum.

Drainage area.- 6,847 square miles.

Records available.- December 1939 to September 1940 in reports of U. S. Geological Survey; September 1913 to September 1923 (gage heights only), December 1939 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during period, 164,000 second-feet Apr. 1 (gage height, 22.7 feet, from graph based on gage readings); minimum, 1,010 second-feet Aug. 25 (gage height, 1.29 feet).
1913-23, 1939-40: Maximum discharge, that of Apr. 1, 1940; minimum not determined. Maximum stage known, 32.1 feet, from floodmarks, Mar. 19, 1936 (discharge not determined).

Remarks.- Records good except those prior to July 2, which are fair, and those for period of ice effect, which are poor. Prior to July 2, gage read twice daily.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				2,100	1,300	2,900	160,000	14,200	13,800	6,060	3,420	17,500
2				2,000	1,280	2,900	124,000	13,300	17,500	6,750	2,680	8,570
3				1,900	1,250	3,000	81,100	12,800	16,000	6,750	2,200	4,620
4				1,800	1,250	3,200	86,500	12,400	9,450	6,750	1,900	3,440
5				1,700	1,280	4,000	119,000	11,500	10,300	5,560	1,700	2,950
6				1,600	1,300	6,000	96,000	10,300	9,860	4,760	1,570	2,470
7			2,680	1,550	1,350	9,400	67,000	9,450	8,650	4,150	1,550	2,070
8			2,680	1,500	1,400	9,200	61,300	9,450	9,050	3,580	1,400	1,820
9			2,220	1,450	1,600	8,200	94,000	8,650	9,450	3,210	1,380	1,720
10			2,220	1,400	1,700	7,500	82,000	8,650	9,450	2,920	1,330	1,900
11			2,330	1,400	1,900	6,500	56,000	8,250	a8,800	2,730	1,280	4,040
12			2,220	1,400	2,000	6,000	46,500	7,480	8,250	2,800	1,190	4,150
13			2,440	1,400	2,200	5,600	50,700	7,110	7,110	3,420	1,410	3,360
14			2,680	2,300	2,500	5,600	45,800	7,110	7,110	4,150	1,420	2,750
15			2,800	3,300	4,500	10,000	32,000	6,750	a6,400	4,600	1,300	2,420
16			2,920	3,100	7,800	8,000	a26,000	7,110	a5,500	3,360	1,220	2,540
17			2,800	2,900	7,000	5,800	21,200	7,480	4,760	2,780	1,220	2,330
18			2,680	2,700	5,600	7,200	19,000	7,110	4,450	2,510	1,170	2,200
19			2,680	2,600	4,500	17,700	19,500	6,750	4,150	2,380	1,160	2,330
20			2,920	2,500	4,000	38,100	31,600	8,160	4,450	2,180	1,160	2,180
21			4,810	2,300	3,700	38,100	62,500	19,400	4,450	f2,000	1,100	1,920
22			5,400	2,100	3,500	30,200	69,000	26,300	6,400	f2,330	1,080	1,760
23			5,730	2,000	3,300	23,600	54,000	21,800	4,450	2,920	1,100	1,620
24			5,400	1,900	3,200	14,200	43,700	18,000	4,150	4,010	1,110	1,550
25			5,080	1,800	3,100	14,200	36,700	15,600	4,150	3,470	1,020	1,780
26			4,760	1,700	3,000	11,500	29,000	21,200	4,760	2,880	1,080	2,310
27			3,860	1,650	3,000	11,100	24,200	24,800	4,760	3,210	1,140	2,470
28			3,050	1,600	3,000	11,100	20,000	21,800	4,450	3,720	1,620	2,610
29			2,800	1,500	3,000	12,400	17,500	20,000	6,060	3,580	1,960	2,440
30			2,500	1,450		34,600	15,100	18,000	6,060	3,230	2,220	2,150
31			2,300	*1,350		123,000		15,100		3,580	3,790	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December 7-31	81,960	5,730	2,220	3,278	0.479	0.45
Calendar year						
January	59,950	3,300	1,350	1,934	.282	.33
February	34,510	7,800	1,250	2,914	.426	.46
March	490,800	123,000	2,900	15,830	2.31	2.67
April	1,690,900	160,000	15,100	56,360	8.23	9.18
May	406,010	26,300	6,750	13,100	1.91	2.21
June	224,180	17,500	4,150	7,473	1.09	1.22
July	116,330	6,750	2,000	3,753	.548	.63
August	48,880	3,790	1,020	1,577	.230	.26
September	95,970	17,500	1,550	3,199	.467	.52
Water year 1939-40						

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations upstream.
f Discharge based on partial gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 18. Discharge for periods of backwater effect from North Branch of Susquehanna River, Apr. 2-4, 6, 7, 10, 11, 22, 23, computed on basis of four discharge measurements, gage heights, and records for station at Williamsport.

Clearfield Creek at Dimeling, Pa.

Location.- Water-stage recorder, lat. 40°58'15", long. 78°24'25", at highway bridge at Dimeling, Clearfield County, 400 feet downstream from Little Clearfield Creek. Datum of gage is 1,145.54 feet above mean sea level (general adjustment of 1912).
Drainage area.- 371 square miles.
Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1913 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.- 27 years, 571 second-feet.
Extremes.- Maximum discharge during year, 15,400 second-feet Mar. 31 (gage height, 14.23 feet); minimum, 12 second-feet Oct. 15 (gage height, 3.06 feet); minimum daily, 15 second-feet Oct. 15.
1913-40: Maximum discharge, 30,600 second-feet (revised) Mar. 18, 1936 (gage height, 18.49 feet, from floodmark in gage shelter), from rating curve extended above 15,000 second-feet; minimum, 6 second-feet Oct. 1, 9, 1926; minimum daily, 7.1 second-feet Oct. 1, 1925.
Revisions: The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in previous reports.

Water year	Date	Gage height (feet)	Discharge (second-feet)
1936	Mar. 18	18.49	30,600
1937	Apr. 27	12.39	10,900
1938	Dec. 18	11.73	9,160
1939	Feb. 15	9.18	4,320

Remarks.- Records good except those for period of no gage-height record, which are fair, and those for period of ice effect, which are poor. Some regulation at low stages owing to operation of mills upstream.
Revisions.- Revised figures of discharge, in second-feet, for high-water periods from Mar. 18, 1936, to Sept. 30, 1939, are given herein. They supersede those published in previous reports.

Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)
1935-36		1936-37	
Mar. 18	27,100	Apr. 29	5,660
19	13,200	30	2,890
20	5,640		
21	3,460	1937-38	
		Oct. 29	5,480
1936-37		30	2,980
Nov. 5	5,610	Dec. 18	8,140
6	3,220	19	5,430
Jan. 11	3,860	Mar. 15	3,350
22	6,700	Apr. 12	2,860
23	5,730		
24	3,480	1938-39	
25	5,410	Feb. 15	2,950
26	4,020	16	3,220
Apr. 26	5,030	Mar. 1	3,610
27	10,400	21	2,990
28	9,400		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
March 1936	27,100	1,080	4,153	11.2	12.91
Water year 1935-36	27,100	22	641	1.73	23.53
November 1936	5,610	150	742	2.00	2.23
Calendar year 1936	27,100	22	754	2.03	27.65
January 1937	6,700	801	2,152	5.80	6.69
April 1937	10,400	389	1,855	5.00	5.58
Water year 1936-37	10,400	48	758	2.04	27.76
October 1937	5,480	44	537	1.45	1.67
December 1937	8,140	150	969	2.61	3.01
Calendar year 1937	10,400	44	743	2.00	27.20
March 1938	3,350	390	1,023	2.76	3.18
April 1938	2,860	277	868	2.34	2.61
Water year 1937-38	8,140	16	545	1.47	19.94
Calendar year 1938	3,350	16	392	1.06	14.33
February 1939	3,220	722	1,450	3.91	4.07
March 1939	3,610	634	1,342	3.61	4.16
Water year 1938-39	3,610	19	404	1.09	14.80

Clearfield Creek at Dimeling, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	78	36	50	34	120	10,100	527	689	1,040	150	140
2	68	80	40	48	33	125	4,660	700	689	958	124	98
3	44	77	44	46	33	140	3,350	634	522	645	105	78
4	38	61	45	44	33	250	5,130	566	425	507	93	66
5	31	61	51	43	34	800	3,610	531	350	412	83	58
6	32	62	54	41	*34	700	2,220	465	301	331	78	54
7	35	71	49	40	35	500	1,550	429	260	273	82	50
8	31	112	46	39	36	430	1,970	382	256	241	74	83
9	28	208	42	39	36	370	2,980	412	1,220	213	67	400
10	28	170	48	38	39	320	2,070	479	773	185	61	244
11	26	120	57	38	55	280	1,140	403	527	201	58	210
12	26	100	60	37	80	260	1,780	362	1,030	855	54	150
13	49	86	69	37	150	*280	1,500	342	615	503	61	120
14	20	77	71	60	350	260	1,180	346	429	305	126	98
15	15	67	61	150	270	270	1,000	358	331	225	100	119
16	23	63	68	140	230	260	920	362	316	222	74	120
17	22	57	64	125	200	250	857	370	273	222	61	88
18	26	52	64	110	170	310	1,280	327	242	183	58	77
19	29	50	68	90	150	3,000	1,730	305	1,550	150	78	68
20	26	46	81	80	140	3,740	4,460	1,160	943	132	94	62
21	21	45	207	70	135	2,550	5,660	1,270	561	114	68	57
22	31	45	236	65	130	1,840	4,320	869	412	105	59	58
23	39	44	119	58	125	1,240	2,870	711	342	111	52	55
24	38	39	100	54	120	894	2,070	597	346	262	47	56
25	37	39	88	50	115	755	1,550	592	362	295	38	92
26	a50	40	78	46	115	602	1,180	608	335	180	78	118
27	a100	36	70	43	115	603	972	507	312	137	96	107
28	a450	39	65	41	120	1,280	773	461	308	727	122	84
29	a250	35	60	39	120	2,510	650	387	796	657	94	70
30	a130	39	56	37		8,090	572	342	773	279	82	61
31	a83		54	35		14,400		342		193	95	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,898	450	15	61.2	0.165	0.19
November	2,099	208	35	70.0	.189	.21
December	2,251	236	36	72.6	.196	.23
Calendar year 1939	149,201	3,610	15	409	1.10	14.96
January	1,833	150	35	59.1	.159	.18
February	3,237	350	33	112	.302	.33
March	47,429	14,400	120	1,530	4.12	4.75
April	74,104	10,100	572	2,470	6.66	7.43
May	16,146	1,270	305	521	1.40	1.61
June	16,288	1,550	242	543	1.46	1.63
July	10,863	1,040	105	350	.943	1.09
August	2,512	150	38	81.0	.218	.25
September	3,141	400	50	105	.283	.32
Water year 1939-40	181,801	14,400	15	497	1.34	18.22

Peak discharge.- Mar. 20 (3:30 a.m.) 4,320 sec.-ft.; Mar. 31 (7:30 p.m.) 15,400 sec.-ft.; Apr. 9 (5 a.m.) 3,290 sec.-ft.; Apr. 21 (1:30 a.m.) 6,410 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of one discharge measurement and records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 19.

Sinnemahoning Creek at Sinnemahoning, Pa.

Location.- Water-stage recorder, lat. 41°18'45", long. 78°05'30", a quarter of a mile upstream from Grove Run and 3,500 feet upstream from Pennsylvania Railroad bridge at Sinnemahoning, Cameron County. Datum of gage is 768.99 feet above mean sea level (unadjusted).

Drainage area.- 699 square miles.

Records available.- July 1938 to September 1940.

Extremes.- Maximum discharge during year, 19,100 second-feet Mar. 31 (gage height, 10.57 feet); minimum, 37 second-feet Oct. 8 (gage height, 1.47 feet).

1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, 1.2 second-feet Sept. 4, 1939 (gage height, 1.18 feet); minimum daily, 1.4 second-feet Sept. 3, 1939.

Remarks.- Records good except those for periods of no gage-height record and those for period of backwater from aquatic vegetation, all of which are fair, and those for period of ice effect, which are poor. Slight regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	574	170	250	200	450	14,700	945	a638	667	203	276
2	136	a440	173	230	200	520	8,850	1,060	a610	533	156	242
3	86	a350	256	210	205	640	7,810	945	a520	409	133	162
4	63	a330	541	200	210	800	15,100	890	a460	402	114	126
5	48	a320	524	190	220	1,400	13,800	791	a405	336	98	109
6	46	a310	472	190	230	1,300	8,360	701	370	268	92	92
7	38	353	435	180	*240	1,200	6,020	701	330	223	143	80
8	40	584	457	180	250	1,100	7,080	636	753	196	123	77
9	390	846	409	175	250	1,000	9,350	750	565	180	92	2,200
10	278	740	383	*175	240	900	6,010	681	486	176	77	1,100
11	158	750	572	170	240	800	4,120	626	422	203	65	682
12	117	654	574	170	270	680	5,700	582	581	375	57	450
13	95	599	626	180	450	*700	5,060	617	486	336	52	347
14	82	541	663	250	1,050	730	3,700	608	396	228	63	278
15	73	464	549	900	900	740	2,640	582	330	176	80	250
16	63	422	508	800	800	730	2,100	636	308	170	61	298
17	57	416	524	600	720	740	1,720	626	263	184	52	268
18	52	370	508	510	650	1,000	2,620	574	232	148	52	207
19	50	347	457	450	600	5,600	4,360	565	320	130	63	170
20	48	324	670	400	550	4,400	5,370	5,140	319	114	102	145
21	52	303	1,530	350	520	3,070	7,160	5,190	237	100	87	139
22	96	278	1,450	310	500	2,400	5,910	a3,250	200	90	63	162
23	145	263	1,170	290	480	1,740	4,260	a2,100	180	87	52	148
24	130	241	967	270	460	1,420	3,250	a1,600	192	190	46	126
25	103	219	857	250	450	1,200	2,560	a1,530	338	216	44	304
26	164	203	740	240	440	1,080	2,110	a1,370	293	173	57	556
27	817	196	582	230	440	1,000	1,680	a1,000	342	166	96	293
28	3,900	211	464	220	430	989	1,380	a880	268	608	203	228
29	1,580	180	400	210	430	1,630	1,180	a750	602	450	188	192
30	960	170	330	205		8,100	1,040	a660	541	414	130	170
31	654		290	200		16,800		a640		283	120	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,739	3,900	38	346	0.495	0.57
November	11,998	846	170	400	.572	.64
December	18,251	1,530	170	589	.843	.97
Calendar year 1939	282,347	7,010	1.4	774	1.11	15.01
January	9,185	900	170	296	.423	.49
February	12,625	1,050	200	435	.622	.67
March	64,859	16,800	450	2,092	2.99	3.45
April	16,500	15,100	1,040	5,500	7.87	8.78
May	37,626	5,190	565	1,214	1.74	2.00
June	11,987	753	180	400	.572	.64
July	8,231	667	87	266	.381	.44
August	2,964	203	44	95.6	.137	.16
September	9,877	2,200	77	329	.471	.53
Water year 1939-40	363,342	16,800	38	993	1.42	19.34

Peak discharge.- Mar. 19 (3:30 a.m.) 17,000 sec.-ft.; Mar. 31 (11:40 p.m.) 19,100 sec.-ft.; Apr. 5 (1 a.m.) 17,000 sec.-ft.; Apr. 9 (5 a.m.) 10,400 sec.-ft.; May 20 (4 p.m.) 7,400 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 19. Discharge for period of backwater from aquatic vegetation, June 20 to Sept. 30, computed on basis of five discharge measurements, gage heights, and records for nearby stations.

Driftwood Branch of Sinnemahoning Creek at Sterling Run, Pa.

Location.- Staff gage, lat. 41°24'30", long. 78°11'25", 800 feet upstream from highway bridge at Sterling Run, Cameron County, and 1,100 feet upstream from mouth of Sterling Run. Datum of gage is 894.60 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 281 square miles.

Records available.- November 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; September 1913 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 20 years (1919-40), 440 second-feet.

Extremes.- Maximum discharge during year, 7,390 second-feet Apr. 4 (gage height, 7.1 feet, from graph based on gage readings); minimum discharge observed, 6.7 second-feet Aug. 24, 25 (gage height, 1.18 feet).

1913-40: Maximum discharge, 28,400 second-feet Mar. 17, 1936 (gage height, 12.0 feet, from graph based on gage readings), by slope-area method; minimum discharge observed, 0.4 second-foot Sept. 7, 12-14, 1930.

Remarks.- Records poor. Gage read twice daily. Slight regulation caused by operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	142	315	a80	135	92	200	5,890	354	254	226	27	46
2	71	241	67	125	92	205	3,940	406	245	157	21	43
3	67	203	102	115	92	210	2,760	379	211	142	19	27
4	45	196	262	105	94	300	6,620	354	186	157	17	20
5	24	186	301	100	96	800	6,130	324	166	112	14	17
6	24	183	311	95	100	750	3,430	306	145	90	20	14
7	23	a210	292	90	*104	660	2,930	297	131	78	17	11
8	40	a340	275	87	102	600	3,090	275	203	67	19	14
9	522	462	266	85	102	520	4,780	297	169	62	14	172
10	155	433	245	83	102	450	2,620	266	139	73	11	65
11	92	433	283	82	120	350	1,680	237	128	86	9.9	42
12	82	379	329	80	170	280	1,800	230	301	154	8.7	29
13	50	379	311	80	250	280	2,330	266	211	93	9.3	24
14	44	279	379	150	600	*290	1,930	249	163	82	13	22
15	39	275	329	450	450	290	1,120	226	136	65	9.9	24
16	35	262	320	400	350	300	765	279	117	58	8.7	112
17	26	249	315	340	310	270	690	245	102	60	8.7	60
18	26	237	306	290	280	400	1,220	237	95	48	7.5	37
19	29	226	379	260	250	2,770	2,330	230	110	36	14	29
20	26	207	522	220	240	1,800	2,190	2,570	98	34	17	24
21	26	179	619	200	230	1,070	2,620	2,190	84	a31	14	24
22	34	169	765	180	220	765	2,190	1,280	73	28	11	a35
23	73	145	690	160	210	586	1,500	845	78	32	8.7	33
24	55	117	553	140	205	553	1,120	654	105	65	6.7	24
25	60	107	462	130	205	354	975	619	196	53	6.7	99
26	161	100	379	120	200	354	765	553	148	54	14	107
27	770	90	262	110	200	379	586	406	157	67	32	63
28	1,520	112	220	105	200	354	491	354	117	100	71	46
29	553	98	190	100	200	553	433	306	189	67	43	38
30	491	98	170	98		2,240	379	266	151	49	28	32
31	379		150	95		6,130		254		37	32	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,684	1,520	23	183	0.651	0.75
November	6,910	462	90	230	.819	.91
December	10,134	765	67	327	1.16	1.34
Calendar year 1939	123,961.5	4,020	.5	340	1.21	16.40
January	4,810	450	80	155	.552	.64
February	5,866	600	92	202	.719	.78
March	25,063	6,130	200	808	2.88	3.32
April	69,304	6,620	379	2,310	8.22	9.17
May	15,754	2,570	226	508	1.81	2.09
June	4,608	301	73	154	.548	.61
July	2,463	226	28	79.5	.283	.33
August	552.8	71	6.7	17.8	.063	.07
September	1,333	172	11	44.4	.158	.18
Water year 1939-40	152,481.8	6,620	6.7	417	1.48	20.19

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 28 to Mar. 18.

North Bald Eagle Creek at Beech Creek Station, Pa.

Location.- Water-stage recorder, lat. 41°03'55", long. 77°34'00", at highway bridge just downstream from Beech Creek, at Beech Creek Station, Clinton County. Datum of gage is 571.74 feet (revised) above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 559 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; June 1910 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 30 years, 782 second-feet.

Extremes.- Maximum discharge during year, 16,200 second-feet Mar. 31 (gage height, 11.06 feet); minimum daily, 118 second-feet Oct. 15.

1910-40: Maximum discharge, 22,300 second-feet Mar. 18, 1936 (gage height, 14.42 feet), from rating curve extended above 10,000 second-feet; minimum, 15 second-feet Jan. 9, 1931 (gage height, 1.12 feet); minimum daily, 25 second-feet (estimated) Jan. 22, 23, 1931.

Remarks.- Records fair. Some regulation at low stages owing to operation of gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	294	308	149	143	153	180	9,950	890	1,120	618	188	167
2	191	253	154	142	152	180	5,520	917	1,070	534	181	178
3	150	206	148	142	152	190	4,330	828	989	471	174	181
4	142	172	166	141	150	500	6,800	786	890	444	170	159
5	136	192	160	141	155	802	5,520	704	802	412	174	160
6	145	248	154	141	160	736	3,620	633	712	360	164	158
7	143	264	156	140	160	618	2,700	602	649	327	172	148
8	126	295	148	140	165	550	3,840	557	1,550	327	167	154
9	167	325	153	140	*165	527	5,340	610	1,640	303	157	395
10	150	244	144	140	170	492	3,480	594	1,220	283	154	288
11	143	216	173	140	180	448	2,500	542	980	286	151	230
12	136	197	146	140	220	450	2,440	527	854	478	161	196
13	129	198	160	140	300	499	2,020	520	728	392	180	183
14	128	188	162	160	700	522	1,740	520	625	300	217	179
15	118	182	145	320	500	618	1,540	520	564	286	176	162
16	146	173	152	250	400	506	1,350	602	527	276	160	383
17	132	168	138	210	350	450	1,200	572	457	270	164	259
18	132	159	172	200	320	958	1,370	542	512	256	153	197
19	129	148	154	190	290	4,020	1,420	554	752	239	171	188
20	134	170	194	180	260	3,010	3,960	2,080	580	232	173	179
21	172	152	273	170	240	2,080	6,240	1,900	457	209	161	178
22	196	153	244	170	230	1,680	4,250	1,560	412	213	155	194
23	168	140	184	165	220	1,200	2,900	1,320	380	224	159	200
24	150	157	160	165	210	1,010	2,260	1,150	438	286	160	181
25	148	142	156	160	200	863	1,850	1,300	444	260	156	286
26	172	132	152	160	190	744	1,610	1,260	412	278	184	380
27	262	150	150	160	185	760	1,360	1,220	392	292	208	246
28	437	151	148	155	180	1,580	1,170	1,130	394	249	262	217
29	264	148	146	155	180	1,710	1,040	1,030	657	244	205	190
30	219	138	145	155		5,740	944	926	564	209	186	206
31	256		144	154		14,400		1,020		209	180	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,415	437	118	175	0.313	0.36
November	5,769	325	132	192	.343	.38
December	5,030	273	138	162	.290	.33
Calendar year 1939	204,108	4,010	118	559	1.00	13.57
January	5,109	320	140	165	.295	.34
February	6,937	700	150	239	.428	.46
March	48,023	14,400	180	1,549	2.77	3.19
April	94,264	9,950	944	3,142	5.62	6.27
May	27,916	2,080	520	901	1.61	1.86
June	21,771	1,640	380	726	1.30	1.45
July	9,767	618	209	315	.564	.65
August	5,423	262	151	175	.313	.36
September	6,422	395	148	214	.383	.43
Water year 1939-40	241,846	14,400	118	661	1.18	16.08

Peak discharge.- Mar. 19 (4:15 p.m.) 5,520 sec.-ft.; Mar. 31 (7 a.m.) 16,200 sec.-ft.; Apr. 4 (9 a.m.) 7,180 sec.-ft.; Apr. 9 (1 a.m.) 6,240 sec.-ft.; Apr. 21 (4 a.m.) 6,800 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 3. Discharge for period of backwater from grass and leaves on control, Sept. 1-30, computed on basis of one discharge measurement, gage heights, and records for nearby stations.

Pine Creek at Cedar Run, Pa.

Location.- Water-stage recorder, lat. 41°31'20", long. 77°26'55", at highway bridge at Cedar Run, Lycoming County, about 2,000 feet downstream from mouth of Cedar Run. Datum of gage is 781.96 feet above mean sea level (New York Central Railroad bench mark).

Drainage area.- 604 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; July 1918 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 21 years (1919-40), 749 second-feet.

Extremes.- Maximum discharge during year, 14,700 second-feet Apr. 4 (gage height, 7.89 feet); minimum, 28 second-feet Aug. 25 (gage height, 0.99 foot).

1918-40: Maximum discharge, 30,900 second-feet Mar. 18, 1936 (gage height, 11.39 feet), by slope-area method; minimum, 5.1 second-feet Sept. 6, 1929 (gage height, 0.86 foot).

Remarks.- Records good except those for period of ice effect, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	404	471	170	230	155	175	11,000	1,250	1,440	310	70	68
2	212	367	131	225	150	170	7,230	1,280	1,530	273	53	68
3	132	288	217	220	150	170	6,920	1,130	1,250	214	48	65
4	92	246	631	215	150	250	12,900	1,100	1,050	209	44	56
5	74	229	463	210	150	640	11,800	1,010	890	200	42	51
6	71	246	374	205	155	700	8,400	880	752	171	45	46
7	68	276	340	200	155	550	6,810	820	631	154	62	42
8	68	348	360	200	160	480	8,730	772	631	133	71	39
9	91	410	354	195	160	430	11,100	830	541	124	54	41
10	140	367	354	195	155	400	7,240	742	605	120	42	53
11	99	367	440	190	160	370	5,080	668	487	120	39	62
12	88	396	426	190	180	360	7,280	631	629	158	35	51
13	85	388	495	190	250	350	6,670	588	495	149	39	44
14	71	388	495	200	450	450	4,240	553	404	120	89	42
15	65	347	440	600	400	560	2,960	536	349	102	76	39
16	60	319	410	*420	350	500	2,270	614	316	98	55	113
17	57	294	381	340	320	450	1,850	561	274	94	46	177
18	54	269	367	300	290	500	2,040	512	280	87	44	101
19	51	246	340	280	260	1,900	2,760	495	335	77	51	75
20	48	229	390	260	240	2,300	3,490	2,690	280	74	51	59
21	52	218	695	240	220	1,800	4,470	2,760	225	71	50	56
22	76	201	553	220	210	1,500	4,000	2,320	200	71	42	56
23	85	191	460	210	200	1,200	3,360	1,850	186	74	35	59
24	78	186	400	200	190	1,050	3,360	1,480	214	108	32	56
25	71	172	350	190	185	950	2,860	1,440	342	102	30	101
26	74	162	320	180	180	850	2,490	2,040	268	94	32	247
27	181	184	290	170	175	750	2,170	1,820	251	79	57	144
28	512	162	270	170	175	700	1,860	1,780	225	78	194	109
29	440	145	260	160	*175	820	1,620	1,860	310	71	172	90
30	319	155	250	160		4,130	1,400	1,530	292	101	96	80
31	304		240	155		12,100		1,530		103	78	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,222	512	48	136	0.225	0.26
November	8,267	471	145	276	.457	.51
December	11,666	695	131	376	.623	.72
Calendar year 1939	208,532	7,460	8.0	571	.945	12.84
January	7,120	600	155	230	.381	.44
February	6,150	450	150	212	.351	.38
March	37,555	12,100	170	1,211	2.00	2.31
April	158,360	12,900	1,400	5,279	8.74	9.75
May	38,072	2,760	495	1,228	2.03	2.34
June	15,682	1,530	186	523	.866	.97
July	3,939	310	71	127	.210	.24
August	1,874	194	30	60.5	.100	.12
September	2,290	247	39	76.3	.126	.14
Water year 1939-40	295,197	12,900	30	807	1.34	18.18

Peak discharge.- Mar. 19 (10:30 p.m.) 4,240 sec.-ft.; Mar. 31 (9 p.m.) 14,700 sec.-ft.; Apr. 4 (8:30 p.m.) 14,700 sec.-ft.; Apr. 9 (4 a.m.) 12,000 sec.-ft.; Apr. 12 (3 p.m.) 8,400 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 29. Discharge for period of backwater from leaves on control, Oct. 3-27, computed on basis of one discharge measurements, gage heights, and records for nearby stations.

Lycoming Creek near Trout Run, Pa.

Location.- Water-stage recorder, lat. 41°25'05", long. 77°02'00", at highway bridge half a mile downstream from mouth of Grays Run and 2 3/4 miles upstream from Trout Run, Lycoming County. Datum of gage is 693.76 feet above mean sea level (unadjusted).

Drainage area.- 173 square miles.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; December 1913 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 23 years (1914-16, 1919-40), 257 second-feet.

Extremes.- Maximum discharge during year, 6,630 second-feet Mar. 31 (gage height, 10.10 feet); minimum, 13 second-feet Aug. 25 (gage height, 1.60 feet).
1913-40: Maximum discharge, 17,000 second-feet Mar. 18, 1936 (gage height, 17.34 feet, from floodmarks), by slope-area method; minimum, 3.2 second-feet Sept. 27, 1936; minimum daily, 4.0 second-feet Sept. 19-24, 27, 28, 1936.

Remarks.- Records good except those for periods of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	161	440	43	80	48	45	3,300	369	792	96	32	369
2	68	248	45	76	47	45	2,170	556	875	77	29	133
3	48	180	59	74	46	53	2,280	452	680	63	25	88
4	41	143	112	70	45	131	4,650	462	535	56	23	66
5	35	132	101	68	45	190	3,290	417	421	49	21	53
6	32	143	80	66	*47	206	2,260	357	332	43	19	45
7	30	143	73	64	47	174	2,000	324	266	39	20	39
8	28	140	71	62	46	148	4,040	293	222	36	21	37
9	29	124	69	61	45	130	3,950	324	232	34	20	55
10	30	110	66	60	45	120	2,120	274	219	33	18	52
11	29	103	68	*59	50	108	1,560	242	186	32	17	47
12	28	97	61	58	60	104	1,720	220	178	41	16	42
13	26	88	65	58	70	101	1,280	206	151	39	17	38
14	24	82	63	60	100	128	900	192	122	34	17	36
15	22	77	57	300	180	206	715	180	109	30	18	33
16	21	73	58	*190	100	171	602	231	98	29	18	33
17	20	71	58	150	80	151	535	216	84	27	18	32
18	19	68	60	130	70	176	587	186	78	25	17	30
19	18	65	61	110	62	511	573	172	88	25	17	28
20	18	61	249	100	58	655	1,310	431	75	23	17	26
21	21	60	444	90	54	530	2,040	357	66	21	17	25
22	22	58	277	80	52	452	1,450	293	60	21	16	23
23	24	55	216	75	50	344	1,110	266	57	58	15	23
24	24	54	171	70	48	306	990	248	70	109	14	21
25	24	51	150	65	47	257	820	367	88	58	14	54
26	26	48	130	62	46	230	715	1,470	77	44	15	78
27	55	46	120	58	*46	223	602	1,020	88	39	18	52
28	398	46	110	56	45	203	512	900	77	36	73	44
29	183	45	100	54	45	261	444	755	139	31	60	39
30	117	45	90	52		2,050	395	559	107	46	47	34
31	192		85	50		5,340		799		40	98	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,813	398	18	58.5	0.338	0.39
November	3,096	440	45	103	.595	.67
December	3,412	444	43	110	.636	.73
Calendar year 1939	68,692.9	2,310	7.0	188	1.09	14.76
January	2,608	300	50	84.1	.486	.56
February	1,724	180	45	59.4	.343	.37
March	13,749	5,340	45	444	2.57	2.95
April	48,920	4,650	395	1,631	9.43	10.52
May	13,138	1,470	172	424	2.45	2.82
June	6,572	875	57	219	1.27	1.41
July	1,334	109	21	43.0	.249	.29
August	787	98	14	25.4	.147	.17
September	1,675	369	21	55.8	.323	.36
Water year 1939-40	98,828	5,340	14	270	1.56	21.24

Peak discharge.- Mar. 31 (2 a.m.) 6,630 sec.-ft.; Apr. 4 (6:30 p.m.) 6,370 sec.-ft.; Apr. 8 (4 p.m.) 6,370 sec.-ft.; Apr. 20 (9:30 p.m.) 2,800 sec.-ft.; May 26 (8 a.m.) 2,170 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 2 and Mar. 11-13.

Loyalsock Creek at Loyalsock, Pa.

Location.- Water-stage recorder, lat. 41°19'25", long. 76°54'40", at highway bridge at Loyalsock, Lycoming County, 2½ miles downstream from Wallis Run. Datum of gage is 585.63 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 443 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; July 1925 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 15 years, 696 second-feet.

Extremes.- Maximum discharge during year, 22,000 second-feet Sept. 1 (gage height, 9.62 feet), from rating curve extended above 10,000 second-feet; minimum, 52 second-feet Oct. 19-21.

1925-40: Maximum discharge, 43,700 second-feet (revised) Nov. 16, 1926 (gage height, 12.3 feet), from rating curve extended above 10,000 second-feet; minimum, 12 second-feet Sept. 26, 1939 (gage height, 2.52 feet).

Remarks.- Records good except those for period of ice effect, which are poor.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	716	1,800	136	230	125	104	10,900	946	2,320	578	282	9,310
2	346	1,100	136	220	115	104	5,430	1,270	2,490	456	220	2,290
3	208	723	163	210	110	110	5,110	1,200	1,870	338	184	1,270
4	156	548	264	200	105	350	11,500	1,120	1,410	293	161	822
5	136	472	275	195	105	480	8,900	1,070	1,100	271	138	570
6	117	465	229	190	105	500	5,350	888	844	230	130	429
7	119	458	204	185	110	400	4,750	780	664	193	125	345
8	133	516	189	180	110	350	8,860	710	554	168	150	298
9	117	564	181	180	110	330	9,470	833	530	158	130	410
10	108	465	166	175	110	310	4,900	770	770	150	112	442
11	106	406	181	170	115	300	3,550	655	578	158	100	415
12	92	370	170	170	120	290	3,550	586	486	365	92	326
13	79	346	152	170	130	280	3,050	546	415	624	90	271
14	72	316	166	180	220	280	2,330	500	338	363	84	240
15	68	285	160	1,000	450	460	1,840	471	288	246	80	220
16	66	265	133	650	270	420	1,620	582	261	202	80	240
17	59	251	156	*550	210	370	1,430	910	230	164	75	246
18	55	238	160	450	170	420	1,440	780	206	147	69	220
19	53	225	177	380	150	900	1,440	655	211	135	73	188
20	53	208	305	330	135	1,300	3,960	818	202	125	69	175
21	55	196	1,420	290	125	1,200	6,640	922	172	118	69	161
22	75	193	894	260	120	1,100	4,000	750	154	115	66	158
23	127	181	612	230	115	900	2,950	664	144	620	64	158
24	123	177	460	210	110	700	2,860	610	161	1,920	62	150
25	108	166	400	200	108	600	2,350	628	435	820	59	274
26	108	156	350	180	106	560	2,080	2,260	402	478	64	688
27	150	142	320	170	*105	540	1,770	2,400	471	796	74	395
28	664	146	290	155	104	520	1,470	2,700	374	1,060	300	288
29	764	146	270	145	104	520	1,260	2,490	980	554	394	246
30	450	139	250	135		3,930	1,070	1,770	800	523	235	206
31	540		240	130		18,200		2,050		388	1,140	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,023	764	53	194	0.438	0.51
November	11,663	1,800	139	389	.878	.98
December	9,209	1,420	133	297	.670	.77
Calendar year 1939	190,101	4,090	13	521	1.18	15.95
January	8,120	1,000	130	262	.591	.68
February	4,072	450	104	140	.316	.34
March	36,828	18,200	104	1,188	2.68	3.09
April	125,830	11,500	1,070	4,194	9.47	10.56
May	33,334	2,700	471	1,075	2.43	2.80
June	19,860	2,490	144	662	1.49	1.67
July	12,756	1,920	115	411	.928	1.07
August	4,971	1,140	59	160	.361	.42
September	21,451	9,310	150	715	1.61	1.80
Water year 1939-40	294,117	18,200	53	804	1.81	24.69

Peak discharge.- Mar. 31 (4 a.m.) 20,600 sec.-ft.; Apr. 4 (10 p.m.) 15,200 sec.-ft.; Apr. 8 (10 p.m.) 13,600 sec.-ft.; Sept. 1 (3:45 a.m.) 22,000 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 24 to Mar. 29.

Shamokin Creek at Weigh Scale, Pa.

Location.- Water-stage recorder, lat. 40°48'30", long. 76°35'05", at Weigh Scale, Northumberland County, 1 mile downstream from Trout Run and 2 miles northwest of Shamokin.

Drainage area.- 54.2 square miles.

Records available.- November 1939 to September 1940.

Extremes.- Maximum discharge during period, 2,040 second-feet July 23 (gage height, 4.18 feet), from rating curve extended above 600 second-feet; minimum, 3.2 second-feet Feb. 15 (gage height 0.42 foot); minimum daily, 11 second-feet Feb. 4.

Remarks.- Records fair. Flow regulated at low stages by mine pumps upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			31	13	14	37	645	150	a210	49	62	184
2			35	24	16	36	517	156	174	39	56	115
3			42	17	14	63	422	145	148	38	54	103
4			29	18	11	106	374	131	136	33	42	94
5			29	21	18	69	260	115	133	35	55	85
6			31	15	23	61	212	110	123	36	100	75
7			38	13	20	57	190	101	118	31	80	72
8			25	17	20	55	358	96	108	38	43	65
9			24	19	18	47	374	98	95	35	41	65
10			20	19	19	36	279	85	101	36	40	70
11			22	20	18	53	257	81	92	52	33	61
12			20	21	20	53	246	71	87	46	40	55
13			24	21	18	54	193	77	79	40	47	55
14		22	29	75	19	122	177	71	76	34	39	51
15		26	26	65	13	141	168	65	70	43	39	47
16			25	21	22	18	94	162	97	63	33	43	57
17			28	17	21	25	89	148	85	73	33	41	46
18			21	20	19	17	126	153	74	67	35	32	44
19			18	21	18	44	158	151	62	62	35	44	43
20			22	62	13	46	175	640	134	51	37	37	43
21			21	43	12	38	171	596	142	48	34	35	43
22			26	31	19	30	153	496	118	43	80	37	33
23			25	22	20	30	142	398	108	38	232	38	39
24			23	14	20	29	118	335	98	54	113	35	38
25			26	16	19	24	113	294	101	47	92	30	92
26			21	19	17	30	102	257	291	57	91	42	52
27			29	16	13	29	115	226	209	47	103	69	39
28			29	18	13	43	164	203	206	53	68	49	34
29			34	20	12	44	131	180	171	57	74	45	29
30			30	19	16		585	162	153	44	95	39	37
31				15	17		995		171		76	285	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November 14-30	426	34	18	25.1	0.463	0.29
December	799	62	14	25.8	.476	.55
Calendar year						
January	649	75	12	20.9	.386	.45
February	708	46	11	24.4	.450	.49
March	4,421	995	36	143	2.64	3.03
April	9,073	645	148	302	5.57	6.23
May	3,772	291	62	122	2.25	2.59
June	2,554	210	38	85.1	1.57	1.75
July	1,816	232	31	58.6	1.08	1.25
August	1,672	285	30	53.9	.994	1.15
September	1,866	184	29	62.2	1.15	1.28
Water year						

Peak discharge.- Mar. 30 (10 p.m.) 1,880 sec.-ft.; Apr. 20 (3 p.m.) 1,020 sec.-ft.; July 23 (2:45 p.m.) 2,040 sec.-ft.

a No gage-height record; discharge computed on basis of records for nearby stations.

Penn Creek at Penns Creek, Pa.

Location.- Water-stage recorder, lat. 40°51'35", long. 77°04'05", at bridge on State Highway 104, three-quarters of a mile northeast of Penns Creek, Snyder County. Datum of gage is 506.74 feet above mean sea level (unadjusted).

Drainage area.- 301 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; October 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 11 years, 394 second-feet.

Extremes.- Maximum discharge during year, 11,700 second-feet Mar. 31 (gage height, 11.61 feet); minimum, 13 second-feet Oct. 17 (gage height, 0.99 foot); minimum daily, 36 second-feet Oct. 15.

1929-40: Maximum discharge, 14,900 second-feet (revised) Sept. 16, 1934 (gage height, 13.00 feet), from rating curve extended above 6,000 second-feet; minimum, 7.0 second-feet Sept. 27, 1932; minimum daily, 26 second-feet Nov. 28-30, 1930.

Remarks.- Records good except those for period of ice effect and those for period of no gage-height record, all of which are poor. Flow regulated at low and medium stages by gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	233	348	49	44	45	82	5,410	615	915	364	139	531
2	138	261	55	43	47	80	3,420	705	811	277	116	159
3	120	191	62	42	45	150	2,790	595	705	241	108	130
4	78	159	59	41	47	350	3,530	547	625	226	106	102
5	61	145	52	40	50	596	2,890	501	566	208	95	88
6	63	150	51	40	60	768	2,280	449	510	188	103	75
7	48	162	56	39	68	665	1,800	419	466	172	122	74
8	62	144	50	38	64	482	2,070	387	444	159	107	70
9	60	146	48	38	62	388	2,410	428	558	a150	90	84
10	51	132	50	37	74	346	1,920	407	444	a140	92	112
11	55	121	54	37	90	305	1,550	367	395	a150	84	90
12	53	113	51	38	84	293	1,360	348	367	a170	75	78
13	37	82	57	45	76	235	1,140	337	345	a150	124	74
14	48	107	53	200	80	265	975	333	319	a140	132	70
15	36	93	45	700	78	475	855	330	301	123	109	70
16	52	88	50	300	94	388	778	364	281	128	86	240
17	38	83	51	130	100	338	705	348	264	124	89	165
18	51	79	48	90	94	432	695	319	254	113	87	113
19	40	75	42	*78	150	1,670	690	301	298	116	83	94
20	42	67	97	70	330	2,100	2,010	591	281	110	99	79
21	48	73	128	66	310	1,240	3,090	640	241	97	77	77
22	78	70	100	64	250	1,080	2,320	571	223	104	70	78
23	100	66	82	62	200	655	1,750	538	214	209	73	84
24	90	68	72	60	160	567	1,400	510	232	333	68	81
25	71	58	66	58	120	488	1,180	736	291	193	68	105
26	73	61	62	56	100	460	1,040	1,650	301	142	78	186
27	92	56	56	54	*88	474	885	1,320	281	126	113	147
28	157	60	54	52	86	1,020	772	1,280	229	124	146	112
29	174	62	50	50	84	1,100	705	1,040	391	118	120	99
30	126	52	48	48		4,520	645	855	333	389	99	93
31	190		46	47		9,300		1,060		196	464	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,565	233	36	82.7	0.275	0.32
November	3,372	348	52	112	.372	.42
December	1,844	128	42	59.5	.198	.23
Calendar year 1939	119,223	2,140	30	327	1.09	14.74
January	2,707	700	37	87.3	.290	.33
February	3,136	330	45	108	.359	.39
March	31,312	9,300	80	1,010	3.36	3.87
April	53,065	5,410	645	1,769	5.88	6.56
May	18,891	1,650	301	609	2.02	2.33
June	11,885	915	214	396	1.32	1.47
July	5,480	389	97	177	.588	.68
August	3,422	464	68	110	.365	.42
September	3,560	531	70	119	.395	.44
Water year 1939-40	141,239	9,300	36	386	1.28	17.46

Peak discharge.- Mar. 31 (4 a.m.) 11,700 sec.-ft.; Apr. 8 (11 p.m.) 2,690 sec.-ft.; Apr. 21 (5 a.m.) 3,310 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 22 to Mar. 3. Discharge for periods of backwater from aquatic vegetation, June 16 to July 22, Aug. 1 to Sept. 30, computed on basis of four discharge measurements, gage heights, and records for nearby stations.

Mahantango Creek East near Dalmatia, Pa.

Location.- Water-stage recorder, lat. 40°36'40", long. 76°54'45", at highway bridge 2 miles upstream from mouth and 3¼ miles south of Dalmatia, Northumberland County. Datum of gage is 400.50 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 162 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; October 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 11 years, 210 second-feet.

Extremes.- Maximum discharge during year, 5,180 second-feet Mar. 31; maximum gage height, 9.38 feet Mar. 4 (caused by ice jam); minimum discharge, 13 second-feet Aug. 25 (gage height, 1.15 feet); minimum daily discharge, 17 second-feet Aug. 25.

1929-40: Maximum discharge, 10,600 second-feet (revised) Aug. 24, 1933 (gage height, 13.66 feet), from rating curve extended above 4,000 second-feet; minimum, 1.5 second-feet Sept. 21, 1932 (gage height, 0.84 foot).

Remarks.- Records fair except those for period of ice effect, which are poor. Some regulation at low stages caused by operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	317	26	36	33	92	2,100	243	423	81	43	1,320
2	53	211	26	31	36	86	1,230	259	576	71	34	541
3	222	144	31	27	34	400	885	237	457	60	32	314
4	191	104	34	25	34	1,600	940	214	376	57	28	214
5	114	97	36	24	40	752	725	191	314	57	28	161
6	79	120	31	23	50	570	570	168	272	50	28	124
7	60	112	27	23	56	488	470	156	231	46	35	102
8	48	102	26	25	42	352	704	144	202	43	34	91
9	41	89	25	24	40	299	1,500	146	194	41	28	114
10	35	78	23	22	64	275	1,020	140	263	41	26	112
11	32	70	29	23	82	231	725	131	184	54	22	114
12	32	61	35	26	70	205	637	124	158	76	22	84
13	30	57	33	29	54	208	589	118	142	58	28	73
14	25	53	34	90	48	362	462	116	124	46	64	64
15	23	49	32	900	74	1,650	401	114	110	40	31	63
16	22	41	30	400	86	648	364	144	108	38	24	84
17	22	42	29	250	78	462	321	156	97	36	22	76
18	23	39	29	160	68	691	296	129	93	33	20	62
19	22	38	31	130	200	912	282	118	104	32	34	52
20	20	37	67	110	1,000	830	2,320	114	95	29	33	47
21	20	33	292	90	800	675	2,870	180	81	28	24	47
22	20	33	211	76	400	551	1,620	168	73	27	20	46
23	24	29	156	68	300	435	1,080	146	70	165	19	42
24	23	30	123	60	200	356	775	140	74	168	19	39
25	21	28	90	56	150	307	593	146	73	84	17	65
26	23	27	80	50	*120	252	484	442	68	54	21	154
27	23	26	66	48	110	234	393	520	86	42	27	99
28	67	25	60	44	105	292	325	610	78	46	43	74
29	61	26	54	42	100	292	285	561	91	49	44	68
30	44	24	45	39		808	259	444	88	81	34	58
31	89		41	36		4,300		440		67	676	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,604	222	20	51.7	0.319	0.37
November	2,142	317	24	71.4	.441	.49
December	1,852	292	23	59.7	.369	.43
Calendar year 1939	67,100.7	1,720	4.3	184	1.14	15.42
January	2,987	900	22	96.4	.595	.69
February	4,474	1,000	33	154	.951	1.03
March	19,615	4,300	86	633	3.91	4.50
April	25,225	2,870	259	841	5.19	5.79
May	6,959	610	114	224	1.38	1.60
June	5,305	576	68	177	1.09	1.22
July	1,800	168	27	58.1	.359	.41
August	1,560	676	17	50.3	.310	.36
September	4,504	1,320	39	150	.926	1.03
Water year 1939-40	78,027	4,300	17	213	1.31	17.92

Peak discharge.- Mar. 15 (6:45 a.m.) 2,470 sec.-ft.; Mar. 31 (9:30 a.m.) 5,180 sec.-ft.; Apr. 9 (6 a.m.) 1,710 sec.-ft.; Apr. 20 (8:30 p.m.) 4,250 sec.-ft.; Sept. 1 (1:30 a.m.) 1,920 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 4. Discharge for periods of backwater from aquatic vegetation and leaves, Oct. 1 to Dec. 20 and June 7 to Aug. 30 computed on basis of five discharge measurements, gage heights, and records for stations nearby.

Frankstown Branch of Juniata River at Williamsburg, Pa.

Location.- Water-stage recorder, lat. 40°27'45", long. 78°12'00", at highway bridge at Williamsburg, Blair County, 2¼ miles upstream from Clover Creek. Datum of gage is 831.78 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 291 square miles.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1916 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 21 years (1919-40), 386 second-feet.

Extremes.- Maximum discharge during year, 12,900 second-feet Mar. 31 (gage height, 12.94 feet), from rating curve extended above 2,200 second-feet on basis of slope-area determination at gage height, 18.58 feet; minimum, 22 second-feet Oct. 10 (gage height, 1.40 feet); minimum daily, 54 second-feet Jan. 1.
1916-40: Maximum discharge, 47,600 second-feet Mar. 18, 1936 (gage height, 18.58 feet, from floodmark in gage shelter), by slope-area method; minimum, 13 second-feet July 24, 1934 (gage height, 0.97 foot); minimum daily, 31 second-feet (estimated) Dec. 24, 25, 1930.
Maximum stage known, 19.1 feet, from floodmark, June 1, 1889 (discharge, about 35,500 second-feet).

Remarks.- Records good. Regulation at low stages caused by operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	126	64	54	63	183	4,720	425	629	370	84	137
2	72	102	66	71	66	245	2,400	494	528	252	78	100
3	95	88	78	68	65	431	1,720	428	460	217	78	86
4	80	80	74	64	64	816	4,030	395	398	208	72	81
5	77	90	69	64	68	684	2,400	357	346	186	72	78
6	69	125	69	63	73	553	1,470	334	301	159	71	73
7	61	185	69	64	119	458	1,040	320	342	149	74	73
8	64	174	66	66	118	400	1,580	290	682	139	70	73
9	68	153	65	65	129	375	2,080	312	1,190	134	68	80
10	61	124	65	61	147	333	1,400	290	511	130	65	79
11	62	110	70	65	268	298	1,040	269	493	125	65	79
12	59	97	70	66	348	337	985	254	638	143	63	71
13	58	89	67	68	547	410	777	249	428	132	94	69
14	60	86	69	99	371	416	696	246	357	113	256	66
15	56	81	68	484	251	511	619	239	363	108	93	64
16	59	77	65	236	270	381	582	277	354	121	80	63
17	59	73	68	153	255	369	528	232	269	116	80	62
18	58	73	67	133	252	766	774	217	293	108	80	60
19	58	73	69	116	262	2,750	781	210	435	102	99	60
20	61	70	106	97	367	1,780	4,300	569	390	98	85	61
21	58	70	182	101	367	1,220	3,700	444	307	92	72	62
22	66	68	122	95	311	960	2,150	395	272	89	71	73
23	57	69	100	88	282	705	1,450	375	256	89	68	63
24	57	68	90	84	245	553	1,100	352	264	158	68	60
25	59	65	64	84	257	478	888	456	259	107	67	78
26	71	64	99	75	209	409	736	444	222	93	105	95
27	91	63	74	71	213	414	638	460	198	89	138	69
28	232	62	75	68	216	828	546	413	189	86	195	65
29	122	63	86	66	194	936	511	395	280	114	146	64
30	92	63	84	68		3,250	460	369	224	140	100	61
31	89		77	66		9,250		459		95	98	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,323	232	56	74.9	0.257	0.30
November	2,731	185	62	91.0	.313	.35
December	2,457	182	64	79.3	.273	.31
Calendar year 1939	122,004	4,570	56	334	1.15	15.59
January	3,023	484	54	97.5	.335	.39
February	6,417	547	63	221	.759	.82
March	31,499	9,250	183	1,016	3.49	4.03
April	46,101	4,720	460	1,537	5.28	5.89
May	10,969	569	210	354	1.22	1.40
June	11,878	1,190	189	396	1.36	1.52
July	4,262	370	86	137	.471	.54
August	2,855	256	63	92.1	.316	.36
September	2,205	137	60	73.5	.253	.28
Water year 1939-40	126,720	9,250	54	346	1.19	16.19

Peak discharge.- Mar. 19 (8 a.m.) 3,220 sec.-ft.; Mar. 31 (6 a.m.) 12,900 sec.-ft.; Apr. 4 (8 a.m.) 5,210 sec.-ft.; Apr. 20 (1:30 p.m.) 5,530 sec.-ft.

Juniata River at Mapleton Depot, Pa.

Location.- Water-stage recorder, lat. 40°23'30", long. 77°56'10", a quarter of a mile downstream from Scrub Run and a third of a mile downstream from highway bridge at Mapleton Depot, Huntingdon County. Datum of gage is 556.89 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 2,030 square miles.

Records available.- December 1937 to September 1940.

Extremes.- Maximum discharge during year, 41,300 second-feet Mar. 31 (gage height, 18.73 feet); minimum, 124 second-feet Sept. 22 (gage height, 1.47 feet); minimum daily, 173 second-feet Sept. 23.
1937-40: Maximum discharge, that of Mar. 31, 1940; minimum, 90 second-feet Oct. 2,1938 (gage height, 1.35 feet); minimum daily, that of Sept. 23, 1940.
Maximum stage known, 38.2 feet, from floodmark, Mar. 18, 1936 (discharge, about 160,000 second-feet).

Remarks.- Records good except those for period of ice effect and those for period of no gage-height record, all of which are poor. Regulation caused by operation of hydro-electric plants and mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	751	890	454	520	420	1,400	30,500	2,990	3,180	1,830	699	774
2	408	1,030	427	500	410	1,170	17,100	2,990	3,570	1,610	594	597
3	828	1,030	450	470	410	1,530	11,200	2,870	3,240	1,390	622	690
4	1,790	710	460	450	420	3,290	17,300	2,450	2,860	1,270	408	605
5	1,040	913	444	420	430	6,230	14,200	2,280	2,530	1,200	427	538
6	704	766	430	410	450	5,050	11,000	2,120	1,910	1,340	471	527
7	595	1,170	462	409	580	3,850	7,730	2,030	1,870	825	473	449
8	501	1,260	554	405	620	3,120	8,480	1,850	2,310	950	407	458
9	472	1,670	315	405	660	2,720	12,900	2,110	6,860	812	411	746
10	460	1,550	399	410	700	2,690	10,700	1,420	6,960	882	426	653
11	426	1,170	436	410	1,200	2,330	8,130	1,080	4,430	834	418	528
12	379	955	398	430	2,000	2,140	6,770	1,290	4,270	776	389	504
13	347	892	422	450	1,600	2,390	5,540	1,650	5,880	840	377	458
14	370	775	426	600	1,400	2,570	4,890	1,570	4,430	836	699	394
15	376	665	394	1,500	1,100	3,240	4,280	1,610	3,180	669	844	455
16	255	640	456	1,900	1,100	2,880	3,710	1,640	2,750	756	547	406
17	328	614	402	1,200	1,150	2,660	3,570	1,640	2,300	755	470	386
18	329	552	396	920	1,400	3,240	a3,800	1,460	1,880	706	408	488
19	344	582	402	780	2,000	11,000	a5,800	1,470	2,900	704	563	410
20	329	476	494	660	*2,500	13,700	a13,900	2,450	2,750	680	746	377
21	306	493	691	680	3,000	9,830	28,600	2,990	2,300	606	472	391
22	392	494	723	620	3,550	7,340	18,200	3,120	1,930	512	386	252
23	364	470	816	580	2,530	5,540	11,400	2,590	1,740	648	403	173
24	333	517	666	560	2,120	4,430	8,330	2,390	1,670	664	402	210
25	361	432	556	520	2,090	3,530	6,590	2,680	1,590	950	450	514
26	376	467	434	490	1,820	2,990	5,540	2,660	1,600	804	402	600
27	541	444	546	470	1,710	2,810	4,580	3,020	1,420	780	639	372
28	805	436	476	450	1,240	3,330	3,990	3,180	1,220	590	866	472
29	712	412	603	430	1,570	4,130	3,440	2,990	1,640	586	858	456
30	986	419	580	440		9,370	3,180	2,680	1,790	1,420	917	437
31	899		540	430		37,000		2,500		1,130	820	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	17,107	1,790	255	552	0.272	0.31
November	22,894	1,670	412	763	.376	.42
December	15,252	816	315	492	.242	.28
Calendar year 1939	747,923	18,400	255	2,049	1.01	13.69
January	18,919	1,900	405	610	.300	.35
February	40,180	3,550	410	1,386	.683	.74
March	167,500	37,000	1,170	5,403	2.66	3.07
April	295,350	30,500	3,180	9,845	4.85	5.41
May	69,770	3,180	1,080	2,251	1.11	1.28
June	86,960	6,960	1,220	2,899	1.43	1.59
July	28,355	1,830	512	915	.451	.52
August	17,014	917	377	549	.270	.31
September	14,320	774	173	477	.235	.26
Water year 1939-40	793,621	37,000	173	2,168	1.07	14.54

Peak discharge.- Mar. 31 (12:15 p.m.) 41,300 sec.-ft.; Apr. 4 (3 p.m.) 19,800 sec.-ft.; Apr. 21 (9:30 a.m.) 32,000 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 30 to Mar. 1.

Juniata River at Newport, Pa.

Location.- Water-stage recorder, lat. 40°28'45", long. 77°07'45", at highway bridge at Newport, Perry County, 1,000 feet upstream from Little Buffalo Creek. Datum of gage is 363.16 feet above mean sea level (general adjustment of 1912).

Drainage area.- 3,354 square miles.

Records available.- March 1899 to December 1913, October 1918 to September 1921, October 1923 to September 1926, October 1931 to September 1940 in reports of U. S. Geological Survey; March 1899 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 39 years (1899-1905, 1907-40), 4,392 second-feet.

Extremes.- Maximum discharge during year, 58,000 second-feet Apr. 1 (gage height, 18.03 feet); minimum, 375 second-feet Oct. 19 (gage height, 2.95 feet).
1899-1940: Maximum discharge, 215,000 second-feet Mar. 19, 1936 (gage height, 34.24 feet, from floodmark in gage shelter), by slope-area method; minimum, 260 second-feet (estimated) Aug. 27, 1925 (gage height, 2.71 feet); minimum daily, 286 second-feet Sept. 25, 1932.
Maximum stage known, 35.9 feet, from floodmarks, June 1, 1889 (discharge, about 237,000 second-feet).

Remarks.- Records good except those for period of ice effect, which are poor. Slight regulation at low stages owing to operation of hydroelectric plants and mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	699	2,000	573	820	630	2,500	53,000	5,270	5,550	2,560	1,770	2,160
2	1,070	1,900	658	760	610	2,400	34,400	5,130	6,270	2,560	1,240	1,660
3	1,320	1,900	658	700	600	2,800	21,400	4,990	6,120	2,370	946	1,580
4	959	1,770	621	680	600	5,390	22,500	4,720	5,270	2,040	838	1,210
5	2,050	1,580	621	640	*610	9,140	27,900	4,310	4,580	1,960	726	1,120
6	2,070	1,280	621	620	700	10,500	21,700	3,790	4,050	1,680	699	962
7	1,310	1,570	621	600	800	7,900	14,800	3,660	3,420	1,580	621	900
8	973	1,680	621	580	840	6,270	13,400	3,420	3,070	1,620	658	740
9	855	2,120	621	580	900	5,410	22,800	3,070	3,640	1,210	645	978
10	810	2,430	686	600	1,200	4,990	21,400	3,300	8,200	1,260	597	1,180
11	645	2,350	561	650	1,600	4,580	16,100	2,820	8,050	1,240	561	1,210
12	645	2,000	621	*700	2,000	4,050	12,800	2,330	5,690	1,420	537	1,040
13	597	1,580	561	800	3,000	4,050	10,800	2,140	5,410	1,210	610	900
14	561	1,370	597	1,100	2,500	4,340	8,970	2,580	6,700	1,160	621	780
15	452	1,180	573	2,200	1,800	6,700	7,750	2,690	5,410	1,180	633	787
16	494	1,120	585	2,800	1,700	6,420	6,850	2,730	4,180	1,210	842	1,370
17	483	1,020	585	3,000	1,700	5,270	6,270	2,660	3,540	1,010	1,040	1,140
18	452	900	549	2,000	2,200	5,540	5,980	2,640	3,300	1,090	907	825
19	402	866	585	1,500	2,800	9,990	6,270	2,540	3,420	1,090	780	740
20	462	814	691	1,100	3,100	20,600	14,300	2,470	3,790	1,010	753	740
21	462	753	915	1,000	5,000	18,500	39,400	3,270	3,790	962	814	740
22	483	740	870	980	8,000	13,400	37,600	4,050	3,180	915	962	686
23	430	740	1,180	880	7,000	10,200	23,000	4,050	2,770	855	753	645
24	514	712	932	840	5,500	7,750	16,100	3,540	2,520	1,030	549	609
25	472	726	790	800	4,500	6,270	12,100	3,920	2,370	1,230	585	597
26	504	658	1,040	770	3,700	5,270	9,900	5,550	2,410	1,160	621	658
27	549	672	1,010	750	3,200	4,580	8,350	5,840	2,410	1,390	740	852
28	699	686	875	720	3,000	4,720	7,150	6,120	2,410	1,120	780	1,090
29	908	597	1,320	680	2,800	5,270	6,270	5,840	2,060	1,070	1,140	904
30	1,280	621	940	640		9,640	5,550	5,270	2,100	1,040	1,550	740
31	1,450		880	650		43,400		5,410		1,150	1,770	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	25,060	2,070	402	808	0.241	0.28
November	38,335	2,430	597	1,278	.381	.43
December	22,961	1,320	549	741	.221	.25
Calendar year 1939	1,206,693	24,800	339	3,306	.986	13.40
January	31,140	3,000	580	1,005	.300	.35
February	72,590	8,000	600	2,503	.746	.80
March	257,840	43,400	2,400	8,317	2.48	2.86
April	514,810	53,000	5,550	17,160	5.12	5.71
May	120,120	6,120	2,140	3,875	1.16	1.33
June	125,680	8,200	2,060	4,189	1.25	1.39
July	42,382	2,560	855	1,367	.408	.47
August	26,288	1,770	537	848	.253	.29
September	29,543	2,160	597	985	.294	.33
Water year 1939-40	1,306,749	53,000	402	3,570	1.06	14.49

Peak discharge.- Apr. 1 (3 a.m.) 58,000 sec.-ft.; Apr. 5 (6 a.m.) 29,600 sec.-ft.; Apr. 21 (10 p.m.) 45,600 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 31 to Mar. 3.

Little Juniata River at Spruce Creek, Pa.

Location.- Water-stage recorder, lat. 40°36'45", long. 78°08'35", 150 feet downstream from Pennsylvania Railroad bridge, half a mile northwest of Spruce Creek, Huntingdon County, and half a mile upstream from mouth of Spruce Creek. Datum of gage is 749.53 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 220 square miles.

Records available.- June 1938 to September 1940.

Extremes.- Maximum discharge during year, 7,760 second-feet Mar. 31 (gage height, 10.82 feet), from rating curve extended above 3,100 second-feet; minimum, 56 second-feet Oct. 2 (gage height, 1.51 feet); minimum daily, 64 second-feet Oct. 15.

1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, 52 second-feet Sept. 7, 26, Oct. 31, 1938, Sept. 12, 1939 (gage height, 1.47 feet); minimum daily, 60 second-feet (estimated) Nov. 26, 27, 1938.

Maximum stage known, about 19.1 feet, from floodmark 175 feet downstream, Mar. 18, 1936 (discharge not determined).

Remarks.- Records good except those for periods of no gage-height record, which are fair. Some regulation owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	101	a73	74	72	138	3,780	449	609	386	85	110
2	75	87	74	76	75	155	2,460	487	534	289	85	85
3	72	79	79	76	72	193	2,100	424	476	263	84	78
4	72	78	75	74	74	438	3,280	388	417	249	82	79
5	71	85	74	77	74	420	2,550	355	375	222	81	75
6	71	103	74	76	88	339	1,680	326	332	201	85	72
7	71	123	75	78	134	292	1,300	313	319	189	82	71
8	65	126	74	78	115	254	1,830	295	1,250	177	81	76
9	69	110	75	79	117	235	1,900	371	1,430	170	79	155
10	71	96	69	74	113	217	1,450	316	768	162	76	99
11	67	90	78	72	177	201	1,180	301	701	168	76	96
12	68	88	a79	74	234	235	1,160	277	727	187	74	83
13	65	82	a76	75	363	271	865	289	555	155	76	76
14	65	79	a76	92	221	286	768	289	449	140	167	75
15	64	79	a74	310	184	332	676	249	402	128	89	75
16	65	76	a70	146	184	263	609	274	352	149	82	74
17	65	74	a74	117	173	243	546	260	298	132	82	74
18	65	75	a75	106	166	548	998	246	339	123	85	71
19	65	74	a81	95	175	2,130	965	243	460	119	95	71
20	65	72	a100	100	240	1,400	3,040	773	301	115	84	71
21	69	75	145	85	227	1,020	3,000	609	254	108	81	69
22	83	74	107	84	206	840	2,190	538	232	104	78	76
23	71	74	95	84	182	653	1,540	476	224	115	76	71
24	69	74	90	79	168	524	1,240	431	249	124	76	71
25	71	a74	79	81	177	444	1,020	526	235	115	75	100
26	88	a74	87	78	153	385	840	503	211	102	100	100
27	108	a73	81	75	149	371	698	495	214	106	108	78
28	170	a72	79	74	151	815	601	445	216	146	103	74
29	101	a72	87	72	147	842	526	417	333	104	88	74
30	84	a73	84	74		2,990	476	392	240	103	81	69
31	82		82	72		5,600		479		94	85	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,371	170	64	76.5	0.348	0.40
November	2,512	126	72	83.7	.380	.42
December	2,541	145	69	82.0	.373	.43
Calendar year 1939	99,481	1,760	62	273	1.24	16.82
January	2,807	310	72	90.5	.411	.47
February	4,611	363	72	159	.723	.78
March	23,074	5,600	138	744	3.38	3.90
April	45,268	3,780	476	1,509	6.86	7.65
May	12,236	773	243	395	1.80	2.07
June	13,502	1,430	211	450	2.05	2.28
July	4,945	386	94	160	.727	.84
August	2,681	167	74	86.5	.393	.45
September	2,448	155	69	81.6	.371	.41
Water year 1939-40	118,996	5,600	64	325	1.48	20.12

Peak discharge.- Mar. 19 (5 a.m.) 2,460 sec.-ft.; Mar. 31 (3 a.m.) 7,760 sec.-ft.; Apr. 4 (2:30 a.m.) 4,000 sec.-ft.; Apr. 20 (12 m.) 3,680 sec.-ft.; June 8 (7:15 p.m.) 4,440 sec.-ft.
a No gage-height record; discharge computed on basis of one discharge measurement and records for nearby stations.

Standing Stone Creek near Huntingdon, Pa.

Location.- Water-stage recorder, lat. 40°31'25", long. 77°58'15", at bridge on State Highway 545, 3¼ miles northeast of Huntingdon, Huntingdon County, and 3¾ miles upstream from mouth. Datum of gage is 617.81 feet above mean sea level (unadjusted).

Drainage area.- 128 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; October 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 10 years, 141 second-feet.

Extremes.- Maximum discharge during year, 3,560 second-feet Mar. 31 (gage height, 7.48 feet); minimum, 2.9 second-feet Dec. 23 (gage height, 1.31 feet); minimum daily, .13 second-feet Oct. 14, Jan. 4-7, 11, 12.
1929-40: Maximum discharge, 5,500 second-feet Mar. 18, 1936 (gage height, 9.14 feet), from rating curve extended above 1,500 second-feet; minimum, 2.8 second-feet Feb. 11, 1931 (gage height, 0.64 foot); minimum daily, 7.6 second-feet Sept. 12-14, 18-26, 1932.
Maximum stage known, 9.38 feet, from floodmark, June 1, 1889 (discharge, about 5,920 second-feet.

Remarks.- Records good except those for period of ice effect, which are poor. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	106	15	15	14	29	1,350	189	170	146	28	19
2	29	54	16	14	14	29	735	218	165	108	26	18
3	21	34	20	14	14	37	593	197	135	91	26	16
4	20	28	21	13	14	230	1,210	175	118	85	25	14
5	18	33	18	13	*14	220	695	156	106	76	21	16
6	18	45	17	13	17	160	516	135	96	68	24	17
7	15	67	18	13	26	128	420	128	89	60	22	16
8	15	73	18	14	22	122	952	120	98	58	24	18
9	17	62	16	14	22	120	1,310	135	116	54	17	49
10	18	45	16	14	22	108	664	137	483	52	16	35
11	17	38	20	13	26	74	492	118	178	49	16	28
12	16	33	23	13	35	97	432	112	139	56	17	22
13	14	30	18	14	45	133	353	112	116	53	20	17
14	13	29	17	30	38	108	299	114	98	45	48	15
15	14	26	15	170	35	311	259	114	91	43	28	15
16	15	23	19	90	35	245	233	148	89	43	19	19
17	16	20	17	60	35	162	215	133	76	43	18	19
18	16	20	16	41	*35	239	240	116	82	38	18	18
19	15	20	17	29	43	1,100	269	110	324	36	24	16
20	17	19	25	24	130	635	1,330	288	160	34	27	14
21	18	22	45	24	140	356	1,780	246	102	33	21	16
22	20	21	35	21	82	282	860	186	87	32	16	15
23	29	20	23	19	60	185	560	163	80	38	16	14
24	21	20	20	17	47	159	452	153	87	63	16	16
25	18	16	19	16	40	143	375	249	104	62	16	21
26	20	17	21	15	36	114	321	206	116	39	23	43
27	30	18	17	15	33	117	279	237	108	34	30	23
28	67	18	18	14	32	204	240	206	85	42	30	19
29	43	19	20	14	31	285	215	181	187	40	27	17
30	28	16	18	14		972	197	153	137	40	22	16
31	40		17	14		2,900		165		34	21	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	751	93	13	24.2	0.189	0.22
November	992	106	16	33.1	.259	.29
December	615	45	15	19.8	.155	.18
Calendar year 1939	41,333.9	1,000	7.8	113	.883	12.01
January	804	170	13	25.9	.202	.23
February	1,137	140	14	39.2	.306	.33
March	10,004	2,900	29	323	2.52	2.91
April	17,846	1,780	197	595	4.65	5.19
May	5,100	288	110	164	1.28	1.48
June	4,022	483	76	134	1.05	1.17
July	1,695	146	32	54.7	.427	.49
August	702	48	16	22.6	.177	.20
September	601	49	14	20.0	.156	.17
Water year 1939-40	44,269	2,900	13	121	.945	12.86

Peak discharge.- Mar. 19 (9 a.m.) 1,370 sec.-ft.; Mar. 31 (11 a.m.) 3,560 sec.-ft.; Apr. 4 (7:30 a.m.) 1,150 sec.-ft.; Apr. 8 (11 a.m.) 1,880 sec.-ft.; Apr. 21 (6 a.m.) 2,200 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 6.

Raystown Branch of Juniata River at Saxton, Pa.

Location.- Water-stage recorder, lat. 40°12'55", long. 78°15'55", at highway bridge half a mile west of Saxton, Bedford County, and 1½ miles upstream from Shoup Run. Datum of gage is 794.73 feet above mean sea level (unadjusted).

Drainage area.- 756 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1911 to September 1940 in reports of Pennsylvania Department of Forests and Waters. Records prior to October 1931 obtained at site 0.8 mile downstream.

Average discharge.- 29 years, 935 second-feet.

Extremes.- Maximum discharge during year, 14,600 second-feet Mar. 31 (gage height, 11.07 feet); minimum, 102 second-feet Sept. 21 (gage height, 1.15 feet); minimum daily, 115 second-feet Sept. 23, 24.
1911-40: Maximum discharge, 80,500 second-feet Mar. 18, 1936 (gage height, 24.54 feet, from floodmark in gage shelter), by slope-area method; minimum, 52 second-feet Oct. 17, 18, 1930.
Maximum stage known prior to 1911, 23.0 feet, from floodmark at present site, June 1, 1889 (discharge, about 71,300 second-feet).

Remarks.- Records good except those for period of ice effect, which are poor. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	254	522	145	180	170	765	9,640	910	1,580	601	274	268
2	466	653	141	180	165	718	5,400	890	1,690	592	216	360
3	1,520	439	148	170	160	1,260	3,460	960	1,390	525	188	305
4	834	354	156	170	160	3,480	6,520	803	1,150	447	168	240
5	434	322	172	160	170	3,250	5,700	727	940	410	164	212
6	284	361	168	160	*185	2,350	3,580	662	784	375	152	193
7	235	575	160	160	250	1,910	2,590	671	671	328	160	180
8	197	960	156	155	340	1,570	2,410	746	1,570	296	152	168
9	172	1,080	156	*155	320	1,490	4,440	636	4,110	274	148	164
10	156	812	148	150	400	1,340	3,690	627	2,990	257	145	160
11	148	609	152	160	550	1,150	2,770	583	1,970	252	141	164
12	138	492	160	160	500	1,040	2,240	542	3,600	257	132	164
13	128	410	148	170	1,500	1,040	1,910	517	3,580	335	132	156
14	125	348	152	190	2,500	1,120	1,580	500	2,240	290	450	152
15	122	303	148	600	1,400	1,500	1,420	492	1,580	240	168	141
16	118	274	148	2,200	*1,100	1,390	1,280	492	1,260	246	141	135
17	118	257	148	1,800	1,000	1,140	1,300	500	1,020	235	148	132
18	118	230	141	1,300	940	1,610	1,270	454	890	240	152	128
19	118	216	152	950	1,500	4,610	1,510	424	1,340	216	172	125
20	118	212	168	700	2,810	5,630	6,810	696	1,640	202	156	125
21	118	207	226	560	3,310	3,950	9,900	1,420	1,160	184	152	122
22	128	188	468	450	2,830	3,010	5,600	1,030	900	184	148	122
23	122	180	370	390	2,240	2,300	3,610	900	756	251	138	115
24	128	176	250	330	1,740	1,740	2,710	774	662	364	135	115
25	122	180	210	290	1,460	1,450	2,130	774	627	341	128	156
26	118	176	200	250	1,360	1,230	1,800	850	627	257	170	182
27	140	164	210	230	1,040	1,050	1,490	1,200	542	212	276	235
28	252	160	200	210	930	990	1,270	1,330	485	201	337	214
29	622	152	200	195	890	1,210	1,100	1,080	904	800	513	168
30	417	148	190	180		2,440	980	920	800	696	412	148
31	335		190	175		11,000		900		462	303	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	8,305	1,520	118	268	0.354	0.41
November	11,160	1,080	148	372	.492	.55
December	5,781	468	141	186	.246	.28
Calendar year 1939	309,122	10,800	94	847	1.12	15.18
January	13,130	2,200	150	424	.561	.65
February	32,220	3,310	160	1,111	1.47	1.59
March	68,733	11,000	718	2,217	2.93	3.38
April	100,110	9,900	980	3,337	4.41	4.92
May	24,010	1,420	424	775	1.03	1.18
June	43,458	4,110	485	1,449	1.92	2.14
July	10,570	800	184	341	.451	.52
August	6,271	513	128	202	.267	.31
September	5,249	360	115	175	.231	.26
Water year 1939-40	328,997	11,000	115	899	1.19	16.19

Peak discharge.- Mar. 4 (2:30 p.m.) 8,470 sec.-ft.; Mar. 19 (9:30 p.m.) 6,200 sec.-ft.; Mar. 31 (9:15 p.m.) 13,900 sec.-ft.; Apr. 4 (5:00 p.m.) 7,790 sec.-ft.; Apr. 20 (11:00 p.m.) 11,900 sec.-ft.; June 9 (3:00 p.m.) 6,350 sec.-ft.
Note.- Stage discharge relation affected by ice Dec. 23 to Feb. 19.

Dunning Creek at Belden, Pa.

Location.- Water-stage recorder, lat. 40°04'20", long. 78°29'35", at highway bridge three-quarters of a mile southeast of Belden, Bedford County, and 3 3/4 miles north of Bedford. Datum of gage is 1,050.93 feet (revised) above mean sea level (unadjusted).

Drainage area.- 172 square miles.

Records available.- May 1939 to September 1940.

Extremes.- Maximum discharge during year, 4,610 second-feet Mar. 31 (gage height, 11.23 feet); minimum daily, 14 second-feet Sept. 23.

1939-40: Maximum discharge, that of Mar. 31, 1940; minimum daily, 14 second-feet Sept. 24-27, 1939, Sept. 23, 1940.

Maximum stage known, 17.8 feet, from floodmarks, Mar. 18, 1936 (discharge not determined; affected by backwater from Raystown Branch of Juniata River).

Remarks.- Records good except those for period of no gage-height record and those for periods of ice effect, all of which are poor. Some regulation at low stages owing to operation of gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	126	28	b37	b35	137	2,780	158	455	138	29	65
2	a74	88	30	b35	b33	200	1,270	211	379	117	26	48
3	a260	73	39	b33	b32	478	860	166	295	105	23	42
4	a140	64	39	b32	b32	729	2,510	152	232	100	23	38
5	a70	70	34	b30	b33	593	1,340	138	191	89	23	34
6	a45	138	33	b29	b34	433	711	130	158	78	22	30
7	a36	205	33	b28	b42	349	481	166	133	67	23	27
8	a28	191	33	b28	b56	310	806	130	294	61	23	27
9	a24	164	33	b29	b90	283	1,270	138	524	58	20	28
10	a22	132	32	b29	170	245	818	125	244	55	19	30
11	a21	116	36	b30	406	231	529	117	536	68	18	30
12	c21	94	37	b32	522	238	433	112	944	94	18	25
13	c20	77	37	b35	792	274	328	112	555	66	18	22
14	c20	68	40	b70	482	289	289	112	292	51	29	20
15	c20	62	37	245	271	310	253	105	223	47	29	19
16	c20	54	39	166	b220	234	265	117	188	58	23	18
17	c20	48	41	116	b200	276	244	100	163	53	27	18
18	c20	47	44	b100	b190	571	358	94	230	47	26	18
19	c20	44	43	b86	b220	1,900	454	94	468	42	28	16
20	c20	41	91	b74	b270	1,400	2,500	353	372	40	28	16
21	c21	39	156	b66	337	871	1,850	268	262	36	22	16
22	c22	38	b120	b60	271	644	932	247	208	36	19	16
23	c20	39	b100	b54	219	449	577	214	180	55	18	14
24	c20	38	b80	b50	191	334	418	188	160	88	18	15
25	c21	34	b70	b47	197	271	337	211	144	49	18	26
26	c28	32	b60	b44	169	234	277	203	122	40	35	28
27	c70	30	b56	b42	158	225	229	203	110	38	69	22
28	222	30	b52	b40	156	326	194	180	124	59	91	18
29	124	29	b48	b38	142	481	172	166	159	58	66	16
30	86	28	b45	b37		1,590	158	155	120	49	50	16
31	99		b40	b36		3,940		319		33	51	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,674	260	20	54.0	0.314	0.36
November	2,239	205	28	74.6	.434	.48
December	1,606	156	28	51.8	.301	.35
Calendar year						
January	1,778	245	28	57.4	.334	.38
February	5,970	792	32	206	1.20	1.29
March	18,845	3,940	137	608	3.53	4.07
April	23,643	2,780	158	788	4.58	5.11
May	5,184	353	94	167	.971	1.12
June	8,465	944	110	282	1.64	1.83
July	1,975	138	33	63.7	.370	.43
August	932	91	18	30.1	.175	.20
September	758	65	14	25.3	.147	.16
Water year 1939-40	73,069	3,940	14	200	1.16	15.78

Peak discharge.- Mar. 31 (6 a.m.) 4,610 sec.-ft.; Apr. 4 (10:15 a.m.) 3,010 sec.-ft.; Apr. 20 (2:40 p.m.) 2,950 sec.-ft.

a No gage-height record; discharge computed on basis of one discharge measurement and records for nearby stations.

b Stage-discharge relation affected by ice.

c Backwater from leaves and moss on control; discharge computed on basis of gage heights and one discharge measurement.

Brush Creek at Gapsville, Pa.

Location.- Water-stage recorder and concrete control, lat. 39°57'20", long. 78°15'15", at highway bridge three-quarters of a mile northwest of Gapsville, Bedford County, and 5¼ miles upstream from Shaffer Creek. Datum of gage is 1,122.39 feet above mean sea level (general adjustment of 1929).

Drainage area.- 36.8 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; November 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 584 second-feet Oct. 2 (gage height, 4.82 feet); minimum, 1.8 second-feet Sept. 24 (gage height, 1.56 feet); minimum daily, 2.6 second-feet Oct. 26.

1939-40: Maximum discharge, 6,870 second-feet Mar. 17, 1936 (gage height, 9.81 feet), from rating curve extended above 2,600 second-feet; minimum, 0.2 second-foot Aug. 28, Sept. 12, 20-23, 1932.

Revisions: The maximum discharge for the water year 1939 has been revised to 795 second-feet Dec. 10 (gage height, 5.29 feet), superseding figure published in report for 1938-1939.

Remarks.- Records good except those for period of ice effect, which are poor. Flow regulated at low stages by mills upstream.

Revisions.- Revised figures of discharge, in second-feet, for discharge above 100 second-feet in the water year 1939, superseding those published in report for 1938-1939, are given herein.

Day	Discharge (second-feet)	Day	Discharge (second-feet)
1938		1939	
Dec. 10	424	Mar. 1	296
11	214	2	209
12	147	3	158
13	103	4	123
		5	140
1939		6	154
Jan. 31	191	7	133
Feb. 1	133	8	112
2	116	9	100
3	310	13	118
4	335	14	116
5	220	15	109
6	166	16	116
7	135	17	109
8	107	Apr. 12	110
10	116	13	105
11	156	17	160
12	141	18	182
13	129	19	192
14	112	20	160
15	137	21	133
16	135	22	125
17	119	June 23	143
18	110	July 5	139
28	280		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
December 1938	1,813.5	424	58.5	1.59	1.83
Calendar year 1938	11,285.6	424	30.9	.840	11.40
January 1939	1,236.3	191	39.9	1.08	1.25
February 1939	3,655	335	131	3.56	3.69
March 1939	3,100	296	100	2.72	3.13
April 1939	2,855	192	95.2	2.59	2.89
June 1939	1,257.7	143	41.9	1.14	1.27
July 1939	984.9	139	31.8	.864	1.00
Water year 1938-39	16,527.6	424	45.3	1.23	16.70

Brush Creek at Gapsville, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	68	9.6	8.4	7.6	41	300	54	139	35	8.2	58
2	233	40	10.1	8.0	7.4	45	211	58	114	28	7.2	26
3	132	31	11.7	7.8	7.4	115	180	50	97	24	6.2	17.4
4	42	24	10.6	7.6	7.4	189	335	43	79	23	5.6	13.0
5	25	29	9.8	7.4	7.7	156	232	37	64	20	5.6	10.6
6	16.9	42	9.0	7.2	8.0	125	173	34	53	16.9	4.9	9.2
7	12.8	60	9.0	7.0	19.0	109	137	39	84	15.3	6.8	7.9
8	10.3	95	8.2	7.4	18.0	103	193	33	367	14.2	6.0	7.2
9	9.0	76	8.2	7.2	17.0	100	245	33	294	14.4	4.6	8.0
10	7.4	60	8.4	7.0	18.0	88	199	31	194	13.0	4.2	6.2
11	6.6	53	8.6	7.2	45	79	160	31	158	18.4	3.8	6.1
12	6.4	45	7.9	7.4	43	73	135	29	141	23	3.6	5.4
13	5.6	37	8.1	7.8	60	72	109	29	139	14.0	3.7	4.8
14	5.7	32	8.0	25	*90	91	91	28	102	11.2	3.8	4.5
15	3.9	27	7.1	100	84	109	76	26	82	10.1	4.2	3.4
16	5.2	24	7.0	60	70	82	74	31	67	12.6	5.2	4.1
17	4.0	21	6.9	42	62	86	65	27	55	10.3	7.0	4.2
18	4.3	18.7	7.6	31	58	120	62	25	62	9.5	5.8	3.4
19	4.0	18.2	6.8	25	96	232	73	23	60	8.4	6.2	3.5
20	3.8	16.7	15.1	20	118	254	390	27	50	7.2	5.8	2.9
21	4.8	15.0	20	16.0	103	216	408	24	38	7.2	4.2	2.7
22	4.4	14.6	14.3	14.0	85	180	274	22	33	8.3	3.7	2.7
23	5.5	14.2	12.6	12.0	74	139	197	21	31	8.8	3.4	2.8
24	3.1	13.1	11.0	11.0	64	109	155	24	29	16.9	3.5	3.4
25	4.3	11.8	10.0	10.0	63	89	123	34	29	12.5	3.2	12.9
26	2.6	11.2	9.5	9.4	55	76	100	34	30	8.8	13.3	9.4
27	6.7	10.4	9.2	8.8	51	67	84	116	23	11.6	14.0	5.8
28	31	10.4	9.4	8.4	49	63	72	127	67	29	39	4.6
29	15.6	10.1	9.2	8.0	43	62	63	109	55	18.4	21	2.7
30	11.2	9.7	9.0	7.8		163	58	86	35	13.2	12.8	3.4
31	46		8.8	7.6		434		94		9.7	33	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	698.1	233	2.6	22.5	0.611	0.71
November	938.1	95	9.7	31.3	.851	.95
December	300.7	20	6.8	9.70	.264	.30
Calendar year 1939	16,341.9	335	1.5	44.8	1.22	16.52
January	513.4	100	7.0	16.6	.451	.52
February	1,430.5	118	7.4	49.3	1.34	1.45
March	3,867	434	41	125	3.40	3.91
April	4,974	408	58	166	4.51	5.03
May	1,379	127	21	44.5	1.21	1.39
June	2,771	367	23	92.4	2.51	2.80
July	472.9	35	7.2	15.3	.416	.48
August	259.5	39	3.2	8.37	.227	.26
September	256.2	58	2.7	8.54	.232	.26
Water year 1939-40	17,860.4	434	2.6	48.8	1.33	18.06

Peak discharge.- Oct. 2 (6 a.m.) 584 sec.-ft.; Mar. 31 (2:30 a.m.) 544 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Feb. 18.

Great Trough Creek near Marklesburg, Pa.

Location.- Water-stage recorder and concrete control, lat. 40°21'00", long. 78°07'50", at highway bridge half a mile upstream from mouth and 3 miles southeast of Marklesburg, Huntingdon County. Datum of gage is 714.48 feet above mean sea level.

Drainage area.- 84.6 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; January 1930 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 10 years, 92.4 second-feet.

Extremes.- Maximum discharge during year, 3,480 second-feet Mar. 31 (gage height, 5.47 feet), from rating curve extended above 1,340 second-feet; minimum, 2.4 second-feet Oct. 12-14, Dec. 15 (gage height, 0.53 foot).

1930-40: Maximum discharge, 9,580 second-feet Mar. 17, 1936 (gage height, 8.46 feet), from rating curve extended above 600 second-feet; minimum, 0.6 second-foot Sept. 22, 23, 1932, Sept. 3, 1934.

Remarks.- Records fair except those for period of ice effect, which are poor. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15.7	49	6.3	5.0	8.4	54	1,370	123	148	38	12.2	12.4
2	14.0	33	6.5	4.6	8.2	54	768	128	130	40	8.3	11.1
3	14.5	19.3	7.3	4.5	8.2	70	548	118	104	27	6.9	8.6
4	16.0	14.8	7.8	4.4	8.0	150	1,310	104	89	24	6.5	7.2
5	10.0	17.8	8.3	4.3	8.4	350	768	95	78	23	5.8	6.7
6	7.6	25	7.8	4.2	10.0	250	478	87	70	21	5.2	5.8
7	6.6	47	7.4	4.1	15.0	190	343	80	66	17.5	5.8	5.2
8	5.6	62	7.2	4.0	35	160	466	78	102	16.6	5.8	5.8
9	6.2	62	5.8	3.9	30	140	742	78	77	15.1	5.0	5.8
10	4.4	49	6.1	3.9	31	120	485	77	68	13.7	4.8	6.5
11	3.9	41	6.5	4.0	60	100	369	68	84	13.7	4.1	7.2
12	3.2	32	6.2	5.0	90	88	295	67	119	16.3	4.1	6.1
13	2.5	24	7.2	7.0	130	90	237	64	82	15.1	5.2	6.1
14	3.2	19.7	6.1	9.0	76	98	202	62	68	14.0	6.2	5.4
15	5.0	17.2	5.8	35	64	140	177	60	61	12.0	12.0	4.6
16	3.7	15.1	5.5	140	*60	130	160	67	60	14.8	8.0	4.3
17	3.2	13.4	5.4	100	56	100	141	68	52	13.9	5.8	4.9
18	3.2	12.0	6.1	66	52	140	151	60	50	15.1	7.0	5.5
19	3.2	9.6	8.0	50	52	899	170	57	62	12.2	10.6	4.3
20	3.4	12.6	9.6	40	160	733	1,160	94	68	10.8	12.0	3.7
21	3.6	10.2	15.9	30	190	470	1,380	98	49	9.0	8.2	4.7
22	3.9	10.7	21	24	170	362	903	84	43	9.9	5.4	5.0
23	3.7	9.5	14.0	20	120	237	597	82	38	12.2	5.4	4.6
24	3.7	9.2	10.0	15	90	177	425	82	40	16.8	5.4	4.8
25	4.1	8.4	8.2	13	75	154	307	95	42	71	4.8	7.6
26	4.3	7.7	7.2	12	66	126	237	113	41	22	15.2	16.4
27	7.4	8.2	6.6	10	62	116	198	181	36	13.7	26	13.1
28	26	7,1	6.6	9.4	58	120	164	184	33	10.9	47	8.1
29	25	6.3	6.2	8.8	57	167	148	154	34	16.2	43	5.8
30	12.9	6.5	5.7	8.6		782	130	138	36	15.7	23	5.2
31	15.8		5.2	8.4		2,780		141		16.8	15.4	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	245.5	26	2.5	7.92	0.094	0.11
November	659.3	62	6.3	22.0	.260	.29
December	243.5	21	5.2	7.85	.093	.11
Calendar year 1939	28,522.7	760	2.2	78.1	.923	12.54
January	658.1	140	3.9	21.2	.250	.29
February	1,850.2	130	8.0	63.8	.754	.82
March	9,547	2,780	54	308	3.64	4.20
April	14,829	1,380	130	494	5.84	6.52
May	2,987	184	57	96.4	1.14	1.31
June	2,030	148	33	67.7	.800	.89
July	587.9	71	9.0	19.0	.225	.26
August	340.1	47	4.1	11.0	.130	.15
September	202.5	16.4	3.7	6.75	.080	.09
Water year 1939-40	34,180.1	2,780	2.5	93.4	1.10	15.04

Peak discharge.- Mar. 5 (4 a.m.) 1,020 sec.-ft.; Mar. 19 (6:30 p.m.) 1,040 sec.-ft.; Mar. 31 (8 a.m.) 3,480 sec.-ft.; Apr. 4 (9 a.m.) 1,510 sec.-ft.; Apr. 21 (3 a.m.) 1,620 sec.-ft.
* Discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 23 to Mar. 18.

Aughwick Creek near Three Springs, Pa.

Location.- Water-stage recorder, lat. 40°12'45", long. 77°55'30", at bridge on State Highway 377, 300 feet upstream from East Broad Top Railroad bridge, 350 feet upstream from mouth of Three Springs Creek, and 3½ miles northeast of Three Springs, Huntingdon County. Datum of gage is 618.65 feet above mean sea level (unadjusted).

Drainage area.- 205 square miles.

Records available.- May 1938 to September 1940.

Extremes.- Maximum discharge during year, 5,250 second-feet Mar. 31 (gage height, 10.00 feet), from rating curve extended above 2,700 second-feet; minimum, 10 second-feet Aug. 13 (gage height, 1.98 feet).
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, 4.3 second-feet Aug. 31, 1938 (gage height, 1.79 feet).
Maximum stage known, about 19.3 feet June 1, 1889 (discharge not determined).

Remarks.- Records good except those for periods of ice effect, which are poor. Records include discharge of Three Springs Creek. Some regulation owing to operation of gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	224	322	26	31	35	150	1,860	232	480	118	32	330
2	92	216	29	29	34	171	1,120	270	337	105	24	178
3	443	134	31	27	33	250	889	241	270	80	19	100
4	193	99	32	26	32	500	2,930	212	223	78	22	69
5	110	103	31	24	31	900	1,440	183	187	71	16	48
6	75	196	28	23	39	652	870	161	157	56	15	36
7	48	354	26	22	38	513	630	153	151	44	16	30
8	36	397	23	22	56	429	1,190	142	258	38	16	26
9	28	299	22	22	54	433	2,060	140	240	36	15	31
10	24	207	22	22	54	390	1,140	134	283	34	14	40
11	22	159	22	21	100	337	770	122	206	37	13	29
12	18	122	25	21	80	305	630	116	380	82	12	25
13	16	105	22	22	69	308	505	112	241	68	11	22
14	16	88	23	60	62	335	411	110	183	43	18	20
15	14	74	23	981	58	730	346	105	150	30	36	18
16	13	63	22	454	59	505	320	116	136	36	24	18
17	13	57	22	271	58	397	298	122	112	43	20	17
18	13	54	20	150	63	559	295	101	110	36	18	16
19	13	51	22	120	*105	1,420	329	92	157	32	22	15
20	13	48	29	96	450	1,330	3,010	109	159	27	19	15
21	14	43	92	82	380	920	3,030	120	101	24	19	15
22	15	41	70	72	310	698	1,590	97	80	22	16	16
23	15	38	40	64	260	497	945	90	74	25	14	15
24	14	36	38	58	225	400	698	95	74	77	12	15
25	15	34	40	54	205	320	537	185	74	139	13	39
26	17	31	40	50	185	271	425	201	362	62	40	127
27	25	28	43	46	170	250	352	543	167	42	113	55
28	134	30	38	43	165	238	295	455	112	32	218	66
29	115	28	40	41	160	238	262	331	77	25	162	59
30	65	27	36	39		894	241	268	136	111	91	40
31	101		33	37		3,840		348		53	146	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,954	443	13	63.0	0.307	0.35
November	3,484	397	27	116	.566	.63
December	1,010	92	20	32.6	.159	.18
Calendar year 1939	72,405.2	2,830	6.2	198	.966	13.14
January	3,030	981	21	97.7	.476	.55
February	3,570	450	31	123	.600	.65
March	19,180	3,840	150	619	3.02	3.48
April	29,418	3,030	241	981	4.79	5.34
May	5,706	543	90	184	.898	1.04
June	5,677	480	74	189	.922	1.03
July	1,706	139	22	55.0	.268	.31
August	1,226	218	11	39.5	.193	.22
September	1,530	330	15	51.0	.249	.28
Water year 1939-40	77,491	3,840	11	212	1.03	14.06

Peak discharge.- Mar. 31 (5:40 a.m.) 5,250 sec.-ft.; Apr. 4 (8 a.m.) 3,970 sec.-ft.; Apr. 9 (2 a.m.) 2,670 sec.-ft.; Apr. 21 (3 a.m.) 3,970 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 29 to Jan. 14, Jan. 18 to Mar. 5.

Kishacoquillas Creek at Reedsville, Pa.

Location.- Water-stage recorder, lat. 40°39'15", long. 77°35'00", at highway bridge 1 mile southeast of Reedsville, Mifflin County, and 1 mile downstream from Honey Creek.

Drainage area.- 164 square miles.

Records available.- November 1939 to September 1940.

Extremes.- Maximum discharge during period, 4,870 second-feet Mar. 31 (gage height, 9.58 feet), from rating curve extended above 2,400 second-feet; minimum daily, 14 second-feet (estimated) Jan. 9-12.

Remarks.- Records good except those for periods of ice effect and those for period of faulty gage-height record, all of which are fair. Some regulation at low stages owing to operation of mill upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			20	19	18	43	d1,930	316	388	178	59	57
2			20	18	18	41	d1,100	328	351	150	55	51
3			21	17	17	76	d900	294	305	135	51	46
4			22	16	17	312	d1,500	274	283	127	48	40
5			21	16	21	281	d1,100	253	263	121	49	37
6			21	15	19	222	d800	236	238	108	47	36
7			21	15	22	178	d630	220	218	103	47	33
8			19	15	27	148	1,020	205	212	100	44	41
9			22	14	26	138	1,140	216	330	94	43	57
10			18	14	27	128	925	203	322	88	44	48
11			20	14	66	118	785	188	253	86	37	44
12			20	14	48	125	680	178	224	99	40	39
13			21	16	5	139	564	173	196	94	42	36
14			20	35	36	181	485	171	173	85	57	35
15			20	147	32	260	428	166	161	80	44	33
16			19	65	34	176	401	181	152	77	42	100
17			19	45	33	155	363	169	138	73	41	74
18			21	40	32	411	363	158	151	69	42	57
19			20	35	44	671	351	155	234	66	51	50
20			25	32	90	516	1,030	283	178	64	45	45
21			42	30	114	428	1,400	265	150	55	40	43
22			32	28	101	375	1,140	257	132	58	38	48
23			26	26	82	305	875	250	131	83	37	44
24			22	25	70	263	726	250	136	141	34	40
25			24	24	62	242	601	408	142	97	36	50
26			25	23	57	214	515	598	172	77	43	67
27			21	22	51	212	456	601	141	70	45	50
28			21	21	50	294	401	564	130	84	52	44
29			20	20	46	294	363	470	197	87	48	40
30		2	21	19		1,320	340	414	166	73	43	41
31			20	19		3,460		442		68	48	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December	684	42	18	22.1	0.135	0.16
Calendar year 1939						
January	859	147	14	27.7	.169	.19
February	1,305	114	17	45.0	.274	.30
March	11,726	3,460	41	378	2.30	2.66
April	23,312	1,930	340	777	4.74	5.29
May	8,886	601	155	287	1.75	2.02
June	6,267	388	130	209	1.27	1.42
July	2,890	178	55	93.2	.568	.66
August	1,392	59	34	44.9	.274	.32
September	1,426	100	33	47.5	.290	.32
Water year 1939-40						

Peak discharge.- Mar. 19 (7:30 p.m.) 830 sec.-ft.; Mar. 31 (3:30 a.m.) 4,870 sec.-ft.; Apr. 8 (4:30 p.m.) 1,400 sec.-ft.; Apr. 20 (11:30 p.m.) 1,560 sec.-ft.; May 26 (12:15 p.m.) 720 sec.-ft.
d Doubtful gage-height record; discharge computed on basis of records for nearby stations.
Note.- Stage-discharge record relation affected by ice Jan. 1-13 and Jan. 18 to Feb. 7.

Tuscarora Creek near Port Royal, Pa.

Location.- Water-stage recorder, lat. 40°30'55", long. 77°25'10", at highway bridge 2 miles southwest of Port Royal, Juniata County, and 3½ miles upstream from mouth. Datum of gage is 419.80 feet above mean sea level (unadjusted).

Drainage area.- 214 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1911 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 29 years, 258 second-feet.

Extremes.- Maximum discharge during year, 5,490 second-feet Mar. 31 (gage height, 10.97 feet); minimum, 4.0 second-feet Oct. 16 (gage height, 2.24 feet); minimum daily, 11 second-feet Oct. 16, 22.

1911-40: Maximum discharge, 14,400 second-feet (estimated) Mar. 18, 1936; maximum gage height, 21.60 feet, from floodmark, affected by backwater from Juniata River, Mar. 19, 1936; minimum discharge, 1 second-foot Aug. 31, Sept. 4-6, 14, 18, 1913, Sept. 21, 1914.

Maximum stage known prior to 1911, 20.5 feet June 1, 1889 (affected by backwater, discharge not determined).

Remarks.- Records good except those for period of ice effect and those for period of no gage-height record, all of which are fair. Regulation at medium and low stages owing to operation of gristmills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	250	22	19	24	135	1,640	263	512	67	31	224
2	46	166	24	17	23	130	1,020	285	451	68	24	132
3	38	90	22	17	23	150	807	263	350	55	22	72
4	53	62	28	16	22	395	2,000	232	282	51	15	51
5	43	59	25	15	*22	700	1,260	204	229	50	18	40
6	28	113	24	15	28	593	825	180	196	44	21	32
7	25	153	22	14	27	428	626	170	168	35	16	29
8	13	133	22	*14	40	364	1,340	151	160	41	16	22
9	22	100	20	14	38	356	2,720	148	158	34	16	133
10	19	73	16	15	39	322	1,280	146	178	32	16	122
11	15	60	24	15	70	282	848	131	133	35	13	67
12	16	49	21	16	55	256	690	122	120	39	14	50
13	15	48	22	17	49	a260	584	122	108	36	20	39
14	16	41	22	40	45	a280	474	120	92	29	31	33
15	12	36	22	400	42	a1,200	417	112	84	33	30	27
16	11	33	22	260	43	a440	367	126	84	26	24	62
17	16	26	19	170	44	a390	332	135	80	31	23	43
18	14	34	25	120	42	a700	339	112	85	32	19	32
19	14	22	21	86	100	a1,200	364	101	291	29	46	28
20	15	32	29	64	250	a1,240	2,340	110	151	28	46	26
21	12	26	68	52	400	a850	3,170	122	96	22	33	26
22	11	26	74	44	320	a640	1,510	101	77	25	24	22
23	12	24	33	39	250	a470	945	91	70	22	21	33
24	17	24	33	35	220	a350	712	89	74	91	20	28
25	16	23	29	33	190	a310	576	182	73	49	15	34
26	16	19	33	30	170	a260	485	425	92	35	22	136
27	18	27	22	29	150	a260	410	367	86	30	39	86
28	34	18	27	27	145	a255	346	360	66	20	73	53
29	71	23	26	26	140	272	305	279	67	26	78	41
30	44	22	22	25		1,140	279	224	63	22	57	39
31	47		20	24		4,330		332		24	126	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	767	71	11	24.7	0.115	0.13
November	1,812	250	18	60.4	.282	.31
December	839	74	16	27.1	.127	.15
Calendar year 1939	65,020.4	2,280	5.1	178	.832	11.29
January	1,708	400	14	55.1	.257	.30
February	3,011	400	22	104	.486	.52
March	18,958	4,330	130	612	2.86	3.29
April	29,011	3,170	279	967	4.52	5.04
May	5,805	425	89	187	.874	1.01
June	4,676	512	63	156	.729	.81
July	1,161	91	20	37.5	.175	.20
August	969	126	13	31.3	.146	.17
September	1,762	224	22	58.7	.274	.31
Water year 1939-40	70,479	4,330	11	193	.902	12.24

Peak discharge.- Mar. 31 (6:30 a.m.) 5,490 sec.-ft.; Apr. 4 (2 p.m.) 2,520 sec.-ft.; Apr. 9 (3:30 a.m.) 3,410 sec.-ft.; Apr. 20 (11 p.m.) 3,810 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 30 to Mar. 5.

Cocolamus Creek near Millerstown, Pa.

Location.- Water-stage recorder and concrete control, lat. 40°33'55", long. 77°07'05", at highway bridge 2.3 miles northeast of Millerstown, Perry County, and 3 miles upstream from mouth. Datum of gage is 425.50 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 57.2 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; February 1930 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 10 years, 69.9 second-feet.

Extremes.- Maximum discharge during year, 3,180 second-feet Mar. 31 (gage height, 7.07 feet); minimum, 2.0 second-feet Aug. 9 (gage height, 1.61 feet); minimum daily, 2.3 second-feet Aug. 9.

1930-40: Maximum discharge, 4,560 second-feet Aug. 24, 1933 (gage height, 8.20 feet); minimum, 0.7 second-foot Aug. 15, 1932 (gage height, 0.81 foot); minimum daily, 1.3 second-feet Aug. 28, 1932.

Remarks.- Records fair. Some regulation at low stages owing to operation of gristmill upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	103	7.4	6.2	6.8	38	622	73	213	22	6.2	130
2	8.4	44	7.2	5.8	7.0	36	342	122	203	16	4.8	52
3	25	29	8.3	5.5	7.2	91	282	86	145	14	3.8	30
4	18	22	6.5	5.2	7.6	469	536	76	113	15	3.7	21
5	13	26	8.4	5.0	*8.4	276	306	66	88	13	3.2	16
6	9.2	37	6.8	4.8	10	238	217	60	71	12	3.6	13
7	7.5	25	6.9	4.6	13	182	174	56	57	10	3.8	10
8	6.9	22	6.7	4.4	16	145	609	50	53	8.3	3.2	14
9	5.9	18	5.4	4.3	13	166	761	53	50	9.8	2.3	108
10	5.1	17	5.9	4.2	12	162	352	48	52	8.7	2.5	43
11	5.6	14	6.9	4.3	40	128	242	44	44	18	3.0	30
12	5.4	13	8.8	5.4	25	116	217	40	40	58	2.7	22
13	5.1	12	7.7	7.0	15	112	184	39	34	18	18	18
14	4.0	12	8.0	50	13	232	145	39	30	11	22	14
15	4.1	12	7.1	250	16	461	125	36	28	8.3	6.4	15
16	5.0	11	7.5	70	24	201	122	65	27	8.6	4.8	201
17	3.3	11	6.4	45	23	161	110	48	23	8.0	5.1	79
18	3.8	8.8	5.6	35	22	307	128	42	24	7.2	6.2	48
19	4.3	8.3	6.4	29	60	570	128	41	37	7.7	12	35
20	4.3	7.2	43	24	300	418	1,280	41	29	5.4	11	30
21	4.8	8.8	63	21	200	293	914	40	20	5.4	6.5	26
22	4.8	8.4	32	18	130	227	407	35	19	3.8	5.8	23
23	4.0	8.4	22	15	100	154	259	33	19	5.6	4.0	19
24	2.9	7.7	15	12	80	114	193	33	22	8.1	4.1	16
25	3.6	7.3	12	10	70	95	159	80	24	9.2	4.5	68
26	5.2	7.0	10	8.5	60	78	131	300	26	7.6	4.8	58
27	7.8	5.4	9.4	8.0	50	74	113	263	22	4.6	7.0	36
28	24	7.1	8.4	7.4	48	159	96	201	18	21	20	30
29	13	6.5	7.6	7.2	45	128	84	152	24	9.2	13	26
30	8.3	7.2	7.0	7.0		1,020	71	113	20	17	9.2	23
31	63		6.6	7.0		1,740		236		7.8	154	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	300.3	63	2.9	9.69	0.169	0.20
November	526.1	103	5.4	17.5	.306	.34
December	369.9	63	5.4	11.9	.208	.24
Calendar year 1939	20,282.9	532	1.8	55.6	.972	13.22
January	690.8	250	4.2	22.3	.390	.45
February	1,422.0	300	6.8	49.0	.857	.92
March	8,591	1,740	36	277	4.84	5.59
April	9,309	1,280	71	310	5.42	6.05
May	2,611	300	33	84.2	1.47	1.70
June	1,575	213	18	52.5	.918	1.02
July	378.3	58	3.8	12.2	.213	.25
August	361.2	154	2.3	11.6	.203	.23
September	1,254	201	10	41.8	.731	.82
Water year 1939-40	27,388.6	1,740	2.3	74.8	1.31	17.81

Peak discharge.- Mar. 19 (8 p.m.) 965 sec.-ft.; Mar. 31 (1:30 a.m.) 3,180 sec.-ft.; Apr. 4 (3 a.m.) 815 sec.-ft.; Apr. 9 (1 a.m.) 1,190 sec.-ft.; Apr. 20 (4 p.m.) 1,910 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 2. Discharge for period of backwater from aquatic vegetation and leaves, July 12 to Sept. 30, computed on basis of four discharge measurements and gage height record.

Sherman Creek at Shermandale, Pa.

Location.- Water-stage recorder, lat. 40°18'25", long. 77°10'05", at highway bridge at Shermandale, Perry County, 1¼ miles upstream from Fishing Run. Datum of gage is 421.90 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 200 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; September 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 11 years, 258 second-feet.

Extremes.- Maximum discharge during year, 5,790 second-feet Apr. 20 (gage height, 7.87 feet); minimum, 7.6 second-feet Dec. 15 (gage height, 0.74 foot); minimum daily, 21 second-feet Dec. 9.

1929-40: Maximum discharge, 18,800 second-feet Aug. 24, 1933 (gage height, 14.05 feet), from rating curve extended above 6,500 second-feet; minimum, 3.9 second-feet Dec. 1, 1930 (gage height, 0.72 foot); minimum daily, 10 second-feet Dec. 24, 25, 1930.

Maximum stage known, 20.34 feet, from floodmark, July 22, 1927 (discharge, about 37,000 second-feet).

Remarks.- Records good except those for periods of backwater from leaves and aquatic growth and those for periods of no gage-height record, all of which are fair, and those for period of ice effect, which are poor. Some regulation owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	303	25	31	34	120	1,730	377	980	94	43	498
2	62	132	31	29	34	110	1,160	428	750	81	34	187
3	117	78	25	28	33	200	939	364	569	72	32	111
4	100	60	34	27	33	1,050	1,900	327	446	69	27	73
5	62	72	30	26	32	865	1,190	286	368	68	23	64
6	44	167	30	25	40	705	892	262	310	59	30	49
7	37	120	25	25	39	547	730	250	a250	50	23	46
8	24	91	25	24	58	525	1,910	227	a220	55	26	40
9	35	71	21	24	56	578	2,510	223	a220	51	25	106
10	31	62	22	23	58	525	1,320	216	231	48	25	106
11	27	54	27	23	100	406	980	194	205	50	23	64
12	25	43	28	24	82	368	892	187	187	68	24	47
13	29	49	32	25	70	364	755	180	170	57	34	41
14	31	43	28	200	62	531	620	170	145	46	154	38
15	22	43	26	700	60	1,120	547	161	132	46	64	41
16	37	40	28	170	58	592	498	254	122	41	42	a80
17	28	33	22	120	56	504	450	223	117	45	40	a60
18	30	36	28	100	54	732	463	180	124	46	44	a45
19	27	24	26	82	200	1,100	481	161	310	43	58	a39
20	30	36	78	70	1,000	1,130	4,210	154	180	38	86	a36
21	32	31	148	62	800	920	3,460	151	124	32	46	a36
22	24	30	87	56	450	730	1,610	138	103	38	41	a31
23	34	32	57	52	300	542	1,130	132	94	36	32	46
24	36	27	51	48	240	428	892	132	102	99	31	42
25	31	28	73	45	190	377	725	286	99	60	35	132
26	32	24	59	43	170	317	635	539	110	44	38	242
27	39	32	35	41	150	314	551	695	112	39	64	111
28	73	29	44	39	140	306	481	605	91	32	142	73
29	76	26	40	*38	130	318	437	463	96	42	154	53
30	68	29	36	36		1,110	398	372	84	37	78	58
31	182		32	35		3,920		915		59	294	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,539	182	22	49.6	0.248	0.29
November	1,845	303	24	61.5	.308	.34
December	1,253	148	21	40.4	.202	.23
Calendar year 1939	75,148	1,970	11	206	1.03	13.97
January	2,271	700	23	73.3	.366	.42
February	4,729	1,000	32	163	.815	.88
March	21,354	3,920	110	689	3.44	3.97
April	34,496	4,210	398	1,150	5.75	6.41
May	9,252	915	132	298	1.49	1.72
June	7,051	980	84	235	1.18	1.31
July	1,645	99	32	53.1	.266	.31
August	1,812	294	23	58.5	.292	.34
September	2,595	498	31	86.5	.432	.48
Water year 1939-40	89,842	4,210	21	245	1.22	16.70

Peak discharge.- Mar. 31 (4:30 a.m.) 5,200 sec.-ft.; Apr. 4 (10 a.m.) 2,220 sec.-ft.; Apr. 8 (10:30 p.m.) 3,650 sec.-ft.; Apr. 20 (7 p.m.) 5,790 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for nearby stations.

Note.- Stage-discharge relation affected by ice Dec. 28 to Mar. 4. Discharge for periods of backwater from leaves and aquatic growth, Nov. 1 to Dec. 27, Aug. 1 to Sept. 15 and Sept. 23 - 30 computed on basis of four discharge measurements, gage heights, and records for stations nearby.

Clark Creek near Carsonville, Pa.

Location.- Water-stage recorder and concrete control, lat. 40°27'35", long. 76°45'10", a third of a mile downstream from Clark Creek Dam, 1 3/4 miles southeast of Carsonville, Cauphin County, and 15 miles upstream from mouth. Datum of gage is 552.48 feet above mean sea level (general adjustment of 1907). Prior to July 27, 1940, chain gage or water-stage recorder at nearby sites, at different data.

Drainage area.- 22.5 square miles.

Records available.- September 1937 to September 1940.

Extremes.- Maximum discharge during year (regulated), 155 second-feet Apr. 25-29; maximum gage height observed, 2.90 feet Jan. 15 (affected by ice); minimum daily discharge, 0.2 second-foot Jan. 29 to Feb. 3.

1937-40: Maximum discharge, 988 second-feet Nov. 13, 1937 (gage height, 2.91 feet, site and datum then in use), from rating curve extended above 400 second-feet; minimum daily, that of Jan. 29 to Feb. 3, 1940.

Remarks.- Records good except those prior to July 27, which are poor. Chain gage read once daily prior to July 27. Flow regulated after Jan. 27 by Clark Creek Reservoir (capacity, about 7,000,000,000 gallons).

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a10	20	a5.2	6.6	0.2	1.2	8.7	56	6.2	3.8	3.1	115
2	4.7	11	6.5	6.3	.2	1.2	6.5	24	5.8	3.3	3.2	55
3	14	7.9	a8.0	5.0	.2	1.6	5.2	24	2.7	3.8	3.0	32
4	6.2	6.5	9.6	4.6	.3	3.3	7.9	23	3.1	3.3	2.9	25
5	4.5	a10	8.3	4.3	.6	2.9	5.8	22	3.6	3.3	2.9	17
6	4.2	17	7.2	4.2	1.0	2.5	5.2	22	4.0	a3.5	3.1	13
7	3.8	8.7	6.5	4.2	*2.2	2.5	5.2	21	4.0	a3.6	3.1	11
8	a4.0	7.2	5.5	4.4	2.2	2.5	8.7	20	4.5	3.8	3.0	11
9	4.2	7.2	4.7	4.3	2.2	2.4	8.7	a13	a4.7	3.8	2.9	55
10	4.0	6.5	a4.8	3.4	2.5	2.2	7.2	a10	5.0	3.8	3.0	106
11	3.8	6.2	6.5	3.5	2.3	2.0	56	a7.5	2.4	3.8	3.2	56
12	3.3	a6.0	7.9	4.7	2.2	1.9	56	a5.5	3.8	4.2	3.0	2.7
13	3.3	5.8	6.5	5.0	2.2	1.9	a45	4.2	3.8	a3.8	3.6	5.1
14	3.3	6.2	6.8	30	2.0	1.9	a35	4.2	3.8	a3.5	3.6	6.5
15	a3.3	5.8	14	100	2.2	a4.5	a26	4.2	3.8	3.3	4.4	6.6
16	3.3	5.8	6.5	50	2.4	a4.0	21	4.5	a3.8	3.3	4.6	6.8
17	3.3	5.8	a6.1	30	2.2	a3.3	20	4.5	3.8	3.3	3.7	6.6
18	3.3	5.2	5.8	15	2.0	2.9	20	4.2	3.8	3.3	3.1	6.6
19	3.3	a5.2	5.8	9.0	2.3	2.9	22	a4.2	3.8	3.3	3.1	6.6
20	3.3	5.2	11	6.0	2.7	3.3	a100	4.2	3.8	3.8	3.0	6.6
21	3.3	5.2	22	3.5	2.3	3.8	144	4.2	3.8	3.3	2.9	6.6
22	a3.3	5.5	8.7	2.0	1.9	3.8	136	4.2	3.8	2.9	3.1	6.8
23	3.3	5.5	7.9	1.5	1.7	3.6	133	4.2	a4.0	2.9	2.7	7.0
24	3.3	5.5	a7.9	1.0	1.5	3.6	136	4.2	4.2	3.3	2.9	6.8
25	3.3	5.5	a7.9	.7	1.4	3.3	155	5.2	4.2	3.3	3.0	8.0
26	3.3	a5.2	7.9	.5	1.3	3.3	155	a5.2	4.2	3.3	3.1	6.8
27	3.8	5.2	7.2	.4	1.3	2.9	155	5.2	5.2	3.3	4.8	6.8
28	7.9	5.2	7.9	.3	1.4	2.9	155	6.5	5.2	3.0	6.6	6.8
29	a6.0	5.2	7.2	.2	1.3	3.1	155	5.8	a4.7	3.0	4.4	6.8
30	4.5	5.2	7.9	.2		3.3	56	6.5	a4.2	2.9	3.2	64
31	16		a7.0	.2		a5.0		5.8		2.9	44	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	151.1	16	3.3	4.87	0.216	0.25
November	212.4	20	5.2	7.08	.315	.35
December	242.7	22	4.7	7.83	.348	.40
Calendar year 1939	10,093.0	163	3.1	27.7	1.23	17.34
January	311.0	100	.2	10.0	.444	.51
February	48.2	2.7	.2	1.66	.074	.08
March	89.5	5.0	1.2	2.89	.128	.15
April	1,850.1	155	5.2	61.7	2.74	3.06
May	339.2	56	4.2	10.9	.484	.56
June	123.7	6.2	2.4	4.12	.183	.20
July	105.7	4.2	2.9	3.41	.152	.17
August	146.2	44	2.7	4.72	.210	.24
September	676.5	115	2.7	22.6	1.00	1.12
Water year 1939-40	4,296.3	155	.2	11.7	.520	7.09

* Winter discharge measurement made on this day.

a No gage-height record; discharge interpolated or based on records for nearby stations.

Note.- Stage-discharge relation affected by ice Jan. 1 to Feb. 14.

Stony Creek near Dauphin, Pa.

Location.- Water-stage recorder, lat. 40°22'45", long. 76°54'31", at Reading Co. railroad bridge 1½ miles northeast of Dauphin, Dauphin County. Datum of gage is 353.75 feet above mean sea level (general adjustment of 1907).

Drainage area.- 35.0 square miles.

Records available.- September 1937 to September 1940.

Extremes.- Maximum discharge during year, 811 second-feet Apr. 20 (gage height, 4.87 feet), from rating curve extended above 400 second-feet; minimum, 2.2 second-feet Oct. 19 (gage height, 1.18 feet); minimum daily, 2.6 second-feet Oct. 19.

1937-40: Maximum discharge, 835 second-feet Nov. 13, 1937 (gage height, 5.00 feet), from rating curve extended above 400 second-feet; minimum, 1.9 second-feet July 4, 1939; minimum daily, that of Oct. 19, 1939.

Remarks.- Records good except those for period of ice effect, which are poor. Some regulation owing to operation of small reservoir upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	47	4.7	7.0	7.2	27	388	88	128	23	14	98
2	14	28	5.2	6.4	7.6	24	249	96	152	21	11	88
3	22	18	6.5	6.0	7.2	64	206	88	113	19	11	33
4	19	12	8.6	5.6	7.2	166	265	85	90	19	10	21
5	13	13	9.6	5.4	7.6	118	215	77	77	19	9.3	16
6	8.6	16	8.3	5.2	10	96	172	69	68	17	9.3	13
7	7.3	15	7.6	5.0	12	78	149	64	60	16	11	11
8	6.0	13	7.3	4.9	9.0	62	310	60	52	15	10	11
9	5.2	11	6.7	4.7	8.6	57	540	57	51	15	9.6	13
10	4.4	9.2	6.5	4.7	13	54	292	55	56	14	9.3	16
11	4.7	8.3	8.8	4.8	17	48	219	51	55	16	8.6	15
12	4.2	7.3	10	5.0	13	50	203	49	50	24	8.3	13
13	5.4	7.0	6.7	6.0	12	41	197	46	45	19	9.8	11
14	6.9	6.7	16	30	10	68	164	45	40	15	11	9.6
15	4.0	6.5	15	150	16	232	139	43	32	14	11	11
16	4.0	6.2	11	80	18	162	125	51	32	13	10	13
17	4.7	6.2	9.2	50	16	118	109	62	30	12	9.3	16
18	4.6	5.7	8.9	35	14	103	103	53	30	12	9.3	16
19	2.6	6.0	8.0	27	70	109	106	46	44	12	10	13
20	2.7	6.0	19	22	82	143	518	43	44	11	11	11
21	4.0	5.7	41	18	66	147	607	48	33	10	9.3	9.6
22	4.2	5.7	32	16	52	132	340	46	28	10	8.3	8.8
23	4.4	5.2	22	14	45	109	242	43	26	11	7.8	7.6
24	4.4	5.2	17	13	36	92	197	41	27	33	7.6	7.3
25	4.4	4.9	14	12	35	85	166	52	29	20	7.6	23
26	4.7	5.2	12	11	37	74	147	127	26	14	9.6	35
27	5.7	5.2	11	10	34	68	128	137	23	23	11	27
28	16	4.9	10	9.5	33	77	114	111	22	30	16	19
29	18	4.9	9.0	8.8	31	87	103	96	23	15	17	14
30	10	4.9	8.2	*8.3		153	96	84	22	17	15	12
31	31		7.4	7.8		736		108		16	64	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	270.1	31	2.6	8.71	0.249	0.29
November	299.9	47	4.9	10.0	.286	.32
December	367.2	41	4.7	11.8	.337	.39
Calendar year 1939	15,168.4	271	2.6	41.6	1.19	16.12
January	593.1	150	4.7	19.1	.546	.63
February	726.4	82	7.2	25.0	.714	.77
March	3,580	736	24	115	3.29	3.80
April	6,809	607	96	227	6.49	7.24
May	2,121	127	41	68.4	1.95	2.25
June	1,508	152	22	50.3	1.44	1.60
July	525	33	10	16.9	.483	.56
August	376.0	64	7.6	12.1	.346	.40
September	611.9	98	7.3	20.4	.583	.65
Water year 1939-40	17,787.6	736	2.6	48.6	1.39	18.90

Peak discharge.- Mar. 31 (6 p.m.) 773 sec.-ft.; Apr. 8 (11:30 p.m.) 624 sec.-ft.; Apr. 20 (8 p.m.) 811 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 25 to Feb. 28.

Conodoquinet Creek near Hogestown, Pa.

Location.- Water-stage recorder, lat. 40°15'10", long. 77°01'15", 1,000 feet upstream from highway bridge, three-eighths of a mile downstream from Hogestown Run, and 1 mile northeast of Hogestown, Cumberland County. Datum of gage is 350.25 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 470 square miles.

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; September 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 11 years, 518 second-feet.

Extremes.- Maximum discharge during year, 7,260 second-feet Apr. 21 (gage height, 8.51 feet); minimum, 73 second-feet Dec. 17 (gage height, 0.92 foot); minimum daily, 90 second-feet Oct. 23.

1929-40: Maximum discharge, 13,100 second-feet Dec. 2, 1934 (gage height, 11.32 feet); minimum, 24 second-feet Dec. 16, 1930.

Remarks.- Records good except those for period of no gage-height record and those for period of ice effect, all of which are fair. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	554	1,380	105	184	135	471	2,840	736	1,550	220	215	2,760
2	404	1,030	112	210	133	440	1,820	767	1,590	206	138	1,950
3	544	573	116	165	132	746	1,460	749	1,060	196	127	850
4	842	400	115	174	132	2,980	2,800	664	811	190	123	540
5	476	374	108	142	132	2,660	2,560	606	658	190	118	381
6	327	894	111	120	163	2,090	1,700	551	556	171	123	301
7	238	730	104	118	160	2,500	1,340	524	486	160	120	238
8	196	556	102	*113	238	1,420	2,490	486	430	154	206	213
9	149	425	96	110	230	1,380	6,110	466	466	154	138	252
10	152	344	96	105	250	1,270	3,580	455	420	152	127	320
11	134	284	a116	104	300	1,020	2,180	430	391	146	120	216
12	122	241	a111	108	400	830	1,780	410	362	152	109	180
13	118	213	a103	120	320	742	1,620	400	335	190	121	160
14	112	180	a103	160	270	826	1,270	391	305	171	255	154
15	97	171	101	600	240	2,350	1,100	372	276	143	214	178
16	101	160	100	2,400	220	1,820	990	440	260	146	146	440
17	100	154	99	2,000	210	1,380	942	466	253	156	134	296
18	97	146	102	1,500	200	1,270	896	395	257	174	143	199
19	100	136	94	1,000	450	1,300	949	362	344	146	138	165
20	94	131	123	500	1,500	1,420	3,950	349	340	143	134	157
21	97	131	292	350	2,800	1,270	6,920	335	280	138	118	152
22	96	127	290	290	2,000	1,130	3,930	327	230	127	120	163
23	90	120	183	230	1,500	922	2,400	309	223	134	112	160
24	97	116	158	200	1,000	742	1,820	301	223	138	112	136
25	94	112	203	180	860	682	1,500	376	223	202	107	310
26	94	112	312	160	773	595	1,270	680	216	152	123	696
27	94	106	222	153	682	573	1,100	936	220	134	174	446
28	186	110	238	150	573	567	963	1,240	220	127	241	293
29	340	109	265	*144	502	567	856	936	216	129	415	230
30	227	102	268	140		836	780	712	257	206	388	190
31	318		210	138		3,230		831		240	536	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,690	842	90	216	0.460	0.53
November	9,667	1,380	102	322	.685	.76
December	4,758	312	94	153	.326	.38
Calendar year 1939	162,935	4,430	80	446	.949	12.89
January	12,068	2,400	104	389	.828	.95
February	16,505	2,800	132	569	1.21	1.31
March	40,029	3,230	440	1,291	2.75	3.17
April	63,916	6,920	780	2,131	4.53	5.06
May	17,002	1,240	301	548	1.17	1.35
June	13,458	1,590	216	449	.955	1.06
July	5,087	240	127	164	.349	.40
August	5,395	536	107	174	.370	.43
September	12,726	2,760	136	424	.902	1.01
Water year 1939-40	207,301	6,920	90	566	1.20	16.41

Peak discharge.- Jan. 16 (10:15 a.m.) 4,060 sec.-ft.; Mar. 31 (7:30 p.m.) 4,060 sec.-ft.; Apr. 9 (5:30 p.m.) 6,430 sec.-ft.; Apr. 21 (9 a.m.) 7,260 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of one discharge measurement and records for nearby stations.

Note.- Stage-discharge relation affected by ice Jan. 7 to Feb. 25.

Paxton Creek near Penbrook, Pa.

Location.- Water-stage recorder, lat. 40°18'30", long. 76°51'00", at bridge on State Highway 543, 2 miles north of Penbrook, Dauphin County, and 7 3/4 miles upstream from mouth.

Drainage area.- 11.2 square miles.

Records available.- March to September 1940.

Extremes.- Maximum discharge during period, 622 second-feet Mar. 30, Apr. 20 (gage height, 3.87 feet); minimum daily, 0.5 second-foot (estimated) Aug. 16, 17, 19, 23-25.

Remarks.- Records good except those for periods of doubtful gage-height record, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						14	42	14	32	1.7	1.0	18
2						12	31	21	14	1.6	.7	7.8
3						113	44	14	10	1.5	d.6	5.4
4						156	52	13	7.7	1.5	d.6	4.1
5						68	29	10	6.7	1.6	d.6	3.3
6						61	23	9.3	6.1	1.4	d.8	2.6
7						41	20	8.8	4.9	1.2	d1.2	2.2
8						41	163	7.7	4.4	.9	d1.0	2.1
9						37	86	7.7	5.4	.9	d.8	3.7
10						27	49	7.2	5.9	.9	d.7	2.3
11						23	37	6.5	5.0	.9	d.6	1.7
12						19	44	6.3	4.3	1.8	d.6	1.6
13						17	30	6.3	3.6	1.4	d.6	1.4
14						180	23	6.1	3.0	1.2	d1.4	1.3
15						102	20	5.4	2.8	.9	d.9	7.4
16						44	19	9.0	2.6	.9	d.5	40
17						45	17	8.6	2.5	.8	d.5	4.7
18						40	18	6.3	2.5	.8	.6	3.2
19						37	22	5.6	3.2	.8	d.5	2.6
20						29	328	5.4	2.6	.8	d1.0	2.4
21						23	137	5.2	2.4	d.8	d.8	4.0
22						20	72	4.6	2.3	d.8	d.6	3.4
23						16	47	4.1	2.2	d1.0	d.5	2.0
24						19	37	4.0	2.4	d2.5	d.5	1.9
25						13	30	5.7	2.4	d1.7	d.5	48
26						14	25	8.0	2.3	d1.1	.9	14
27						11	20	8.8	2.2	d2.3	1.1	8.8
28						14	17	6.0	2.0	1.2	2.2	7.0
29						13	15	4.6	1.9	.9	1.1	5.4
30						113	14	4.0	1.8	1.8	.9	4.4
31						81		12		1.5	45	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February						
March	1,443	180	11	46.5	4.15	4.79
April	1,511	328	14	50.4	4.50	5.02
May	245.2	21	4.0	7.91	.706	.81
June	151.1	32	1.8	5.04	.450	.50
July	39.1	2.5	.8	1.26	.112	.13
August	69.3	45	.5	2.25	.201	.23
September	216.7	48	1.3	7.22	.645	.72
Water year 1939-40						

d Doubtful gage-height record; discharge computed on basis of one discharge measurement and records from nearby stations.

Swatara Creek at Harper Tavern, Pa.

Location.- Water-stage recorder, lat. 40°24'10", long. 76°34'35", at highway bridge at Harper Tavern, Lebanon County, 6 miles northwest of Annville and 8½ miles downstream from Little Swatara Creek. Datum of gage is 355.53 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 333 square miles.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; December 1918 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 21 years, 540 second-feet.

Extremes.- Maximum discharge during year, 11,500 second-feet Sept. 1 (gage height, 11.51 feet); minimum, 55 second-feet Oct. 25.

1918-40: Maximum discharge, 25,300 second-feet Aug. 24, 1933 (gage height, 17.53 feet); minimum, 8 second-feet Sept. 24, 25, 1932.

Maximum stage known, 25.6 feet, from floodmark, June 1, 1889 (discharge, 53,000 second-feet, from rating curve extended above 25,000 second-feet).

Remarks.- Records fair. Some regulation at low stages owing to operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	534	1,020	84	144	145	347	4,140	620	1,660	180	120	9,170
2	208	516	102	130	140	293	2,240	650	2,220	158	90	2,070
3	998	355	168	120	140	972	1,660	635	1,420	139	82	1,080
4	522	268	166	115	145	4,450	2,410	590	1,110	161	78	785
5	302	333	129	115	150	2,000	1,630	525	890	158	80	615
6	218	706	109	110	170	1,510	1,360	451	760	132	78	466
7	169	428	98	110	215	1,300	1,140	414	655	117	117	360
8	139	350	89	*110	220	1,000	2,790	378	590	112	103	297
9	124	280	84	110	185	945	6,440	369	608	106	84	766
10	112	229	84	104	210	863	2,720	347	1,060	106	78	471
11	98	207	168	100	600	715	1,840	322	670	101	74	378
12	87	181	161	100	420	630	1,740	297	570	159	70	285
13	82	166	124	110	270	640	1,600	289	495	164	72	238
14	74	155	152	400	280	1,020	1,280	277	414	120	97	210
15	67	144	169	2,000	250	7,500	1,140	265	369	103	86	189
16	65	134	142	700	310	2,090	1,030	297	347	95	76	210
17	65	129	131	430	320	1,510	917	387	313	92	74	210
18	61	126	131	360	280	1,480	890	313	309	88	76	173
19	59	119	126	310	*440	1,390	917	265	462	86	82	156
20	61	116	628	280	2,000	1,540	4,960	242	373	84	88	148
21	63	107	1,310	260	2,400	1,450	5,170	265	246	80	78	139
22	65	104	730	240	1,100	1,280	2,820	246	216	74	72	139
23	65	102	522	220	680	1,030	1,380	224	210	150	68	134
24	61	102	401	200	585	835	1,510	220	235	315	68	120
25	57	95	316	190	595	760	1,280	294	269	144	66	553
26	59	91	250	180	505	660	a1,110	3,250	227	110	78	973
27	72	89	220	170	428	640	a973	1,960	202	673	99	451
28	280	87	190	165	396	735	820	1,510	183	284	298	318
29	197	84	170	160	365	760	740	1,250	238	132	285	246
30	124	84	160	154		1,240	675	973	216	130	150	202
31	566		150	150		8,220		1,190		252	2,760	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,654	998	57	182	0.547	0.63
November	6,907	1,020	84	230	.691	.77
December	7,464	1,310	84	241	.724	.83
Calendar year 1939	157,346	2,960	32	431	1.29	17.56
January	8,047	2,000	100	260	.781	.90
February	13,944	2,400	140	481	1.44	1.56
March	49,805	8,220	293	1,607	4.83	5.56
April	59,822	6,440	675	1,994	5.99	6.68
May	19,315	3,250	220	623	1.87	2.16
June	17,537	2,220	183	585	1.76	1.96
July	4,805	673	74	155	.465	.54
August	5,727	2,760	66	185	.556	.64
September	21,552	9,170	120	718	2.16	2.41
Water year 1939-40	220,579	9,170	57	603	1.81	24.64

Peak discharge.- Mar. 15 (1 p.m.) 9,820 sec.-ft.; Mar. 31 (3 p.m.) 9,820 sec.-ft.; Apr. 9 (6 a.m.) 8,440 sec.-ft.; Apr. 20 (9 p.m.) 7,860 sec.-ft.; Sept. 1 (10 a.m.) 11,500 sec.-ft.

* Winter discharge measurement made on this day.

a No gage height record; discharge interpolated.

Note.- Stage-discharge relation affected by ice Dec. 26 to Feb. 22. Discharge for periods of backwater from aquatic vegetation, May 26 to July 1, Sept. 3-30, computed on basis of gage heights and three discharge measurements.

Manada Creek at Manada Gap, Pa.

Location.- Water-stage recorder and concrete control, lat. 40°23'55", long. 76°42'40", at highway bridge at Manada Gap, Dauphin County, 3 miles northwest of Shellville and 9 miles upstream from mouth. Datum of gage is 516.07 feet above mean sea level (general adjustment of 1929).

Drainage area.- 13.5 square miles.

Records available.- September 1937 to September 1940.

Extremes.- Maximum discharge during year, 370 second-feet Apr. 20 (gage height, 3.83 feet); minimum, 2.1 second-feet Oct. 23 (gage height, 1.58 feet).

1937-40: Maximum discharge, 388 second-feet Nov. 13, 1937 (gage height, 4.00 feet); minimum, 1.8 second-feet Sept. 27, 1939 (gage height, 1.50 feet).

Remarks.- Records good except those for period of ice effect and those for period of no gage-height record, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	20	2.9	4.5	4.1	15.9	115	26	73	8.8	a6.2	46
2	6.8	13.6	3.8	3.8	4.5	14.2	76	30	84	7.5	a5.0	22
3	12.7	10.4	5.1	3.3	4.2	40	64	26	65	a7.5	a5.0	14.5
4	7.9	8.1	4.6	3.1	4.2	101	85	25	48	a7.5	a4.5	10.6
5	5.7	11.1	3.6	3.1	4.5	73	63	22	39	a7.4	a4.1	8.4
6	4.5	10.5	3.5	2.9	6.2	61	52	20	32	a6.8	a4.1	7.1
7	4.0	8.4	3.2	2.9	7.1	50	45	18.8	26	a6.6	a4.8	6.1
8	3.6	7.8	3.0	3.1	5.3	44	132	18.3	23	a6.4	a4.4	6.4
9	3.5	6.5	3.0	3.0	4.9	39	190	18.3	23	a6.4	a4.3	9.0
10	3.1	6.1	3.4	2.7	7.5	35	113	17.1	22	a6.2	a4.1	6.3
11	2.9	5.7	6.0	2.8	10.6	31	78	16.5	18.8	a7.0	a4.0	5.5
12	3.0	5.1	3.6	3.3	7.8	27	70	15.4	17.1	a10	a3.9	5.1
13	2.9	4.9	4.1	3.5	7.1	25	58	15.4	15.4	a8.5	a3.8	5.1
14	2.7	4.5	5.3	51	5.7	54	47	14.8	13.3	a6.6	4.2	4.9
15	2.6	4.2	4.4	85	9.6	153	41	14.2	12.8	a6.2	3.7	4.5
16	2.6	4.1	4.2	40	11.0	91	37	18.6	12.0	a5.8	4.0	5.6
17	2.6	4.0	4.2	27	9.4	69	33	17.6	11.0	a5.4	4.2	4.7
18	2.8	3.8	4.1	19.8	8.4	58	33	14.8	14.0	a5.4	4.1	4.1
19	2.7	3.8	4.0	16.0	41	62	32	14.2	17.8	a5.4	4.4	4.1
20	2.7	3.6	16.2	b13.0	49	65	232	14.2	13.2	a5.0	3.7	4 0
21	2.8	3.5	14.8	b11.0	39	58	209	14.2	10.6	a4.5	3.5	3.8
22	2.8	3.5	12.0	b9.6	32	50	128	13.3	9.7	a4.5	3.3	3.6
23	2.5	3.3	10.2	b8.6	27	41	86	12.8	9.7	a4.8	3.3	3.5
24	2.2	3.1	8.4	b7.7	26	35	69	12.8	11.0	a14	3.2	3.6
25	2.4	3.0	7.9	b7.0	26	29	54	21	10.6	a9.0	3.2	17.6
26	2.7	3.0	6.8	b6.4	29	26	46	63	9.7	a6.2	5.6	9.3
27	3.7	2.9	6.1	b6.0	20	24	38	53	9.1	a10	5.0	6.8
28	8.9	2.9	5.9	b5.6	18.8	31	34	47	9.1	a13	7.4	6.1
29	4.1	2.8	5.3	5.3	17.1	26	30	40	9.1	a6.6	4.5	5.9
30	4.0	2.8	5.1	5.0		69	28	33	9.0	a7.4	4.4	5.3
31	25		4.7	4.5		225		51		a7.0	53	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	146.4	25	2.2	4.72	0.350	0.40
November	177.0	20	2.8	5.90	.437	.49
December	179.7	16.2	2.9	5.80	.430	.50
Calendar year 1939	5,986.9	101	1.9	16.4	1.21	16.50
January	370.5	85	2.7	12.0	.888	1.02
February	447.0	49	4.1	15.4	1.14	1.23
March	1,722.1	225	14.2	55.6	4.12	4.74
April	2,318	232	28	77.3	5.73	6.39
May	738.3	63	12.8	23.8	1.76	2.03
June	678.0	84	9.0	22.6	1.67	1.87
July	223.4	14	4.5	7.21	.534	.62
August	182.9	53	3.2	5.90	.437	.50
September	249.5	46	3.5	8.32	.616	.69
Water year 1939-40	7,432.8	232	2.2	20.3	1.50	20.48

Peak discharge.- Mar. 31 (1 a.m.) 343 sec.-ft.; Apr. 20 (6:30 p.m.) 370 sec.-ft.

a No gage-height record; discharge computed on basis of two discharge measurements and records for nearby stations.

b Stage-discharge relation affected by ice.

West Conewago Creek near Manchester, Pa.

Location.- Water-stage recorder, lat. 40°04'55", long. 76°43'10", 500 feet upstream from Manchester-York Haven highway bridge and 1½ miles north of Manchester, York County. Datum of gage is 263.04 feet above mean sea level (Pennsylvania Railroad bench mark).

Drainage area.- 510 square miles.

Records available.- October 1928 to September 1940.

Average discharge.- 11 years, 534 second-feet.

Extremes.- Maximum discharge during year, 21,300 second-feet Apr. 20 (gage height, 15.85 feet); minimum, 36 second-feet Aug. 25 (gage height, 1.70 feet); minimum daily, 42 second-feet Aug. 25.

1928-40: Maximum discharge, 47,600 second-feet Aug. 24, 1933 (gage height, 24.14 feet); minimum, 2 second-feet Aug. 7, 8, Oct. 20, 1930.

Remarks.- Records good except those for period of ice effect and those for periods of no gage-height record, all of which are fair. Flow regulated at low stages by grist-mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	842	2,560	81	88	70	459	3,760	543	704	149	97	7,520
2	739	707	80	78	68	451	3,760	612	937	112	76	1,010
3	2,190	372	87	72	67	1,010	2,110	626	548	110	64	445
4	724	264	104	68	66	7,940	3,410	530	408	112	a60	295
5	320	224	113	64	66	3,880	1,800	a500	339	114	a58	222
6	213	483	103	62	68	2,460	1,150	a450	304	126	a56	177
7	164	503	90	60	74	1,560	802	a400	261	106	a700	147
8	127	307	78	58	74	1,240	2,380	a370	222	102	a1,000	130
9	103	247	78	56	76	1,150	8,060	a330	422	78	a300	168
10	101	201	72	56	120	920	2,240	a300	253	83	a80	192
11	90	170	73	56	340	727	1,420	a280	224	62	a60	166
12	78	149	69	*58	300	593	1,150	a260	210	62	a62	120
13	73	133	99	66	230	521	1,370	a250	246	87	a70	108
14	66	133	104	120	1,500	695	920	a245	220	99	a80	102
15	59	126	110	3,000	750	6,350	802	240	165	82	53	91
16	55	111	115	800	550	2,940	738	242	145	65	52	153
17	47	108	93	250	450	1,760	796	520	133	79	80	138
18	52	108	92	180	420	1,320	749	472	136	89	66	120
19	55	106	82	150	1,000	1,110	914	298	143	482	74	95
20	51	98	149	130	5,660	955	12,600	261	173	144	78	84
21	53	98	639	120	3,390	772	10,500	307	147	88	82	77
22	56	106	433	110	1,950	685	3,390	281	125	73	70	82
23	61	92	252	100	1,110	598	1,910	224	111	68	57	67
24	94	84	173	94	833	488	1,420	212	105	207	54	102
25	74	81	109	90	955	459	1,150	230	114	404	42	2,270
26	66	86	144	86	802	424	955	532	116	148	54	4,670
27	65	77	93	82	557	397	820	690	106	102	52	662
28	76	77	111	78	467	408	700	774	104	159	267	390
29	173	87	129	76	451	408	631	566	236	190	463	292
30	185	82	124	74		437	570	412	291	172	268	247
31	562		111	*72		5,240		468		112	1,410	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,614	2,190	47	246	0.482	0.56
November	7,980	2,560	77	266	.522	.58
December	4,190	639	69	135	.265	.31
Calendar year 1939	180,472	10,200	16	494	.969	13.18
January	6,454	3,000	56	208	.408	.47
February	22,464	5,660	66	775	1.52	1.64
March	48,357	7,940	397	1,560	3.06	3.53
April	72,977	12,600	570	2,433	4.77	5.32
May	12,425	774	212	401	.786	.91
June	7,648	937	104	255	.500	.56
July	4,066	482	62	131	.257	.30
August	5,985	1,410	42	193	.378	.44
September	20,342	7,520	67	678	1.33	1.48
Water year 1939-40	220,502	12,600	42	602	1.18	16.10

Peak discharge.- Mar. 4 (12 m.) 10,000 sec.-ft.; Mar. 15 (11:30 a.m.) 9,070 sec.-ft.; Mar. 31 (2 p.m.) 7,790 sec.-ft.; Apr. 9 (6 a.m.) 12,500 sec.-ft.; Apr. 20 (8 p.m.) 21,300 sec.-ft.; Sept. 1 (8:30 a.m.) 11,200 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of one discharge measurement and records for nearby stations.

Note.- Stage-discharge relation affected by ice Jan. 2 to Feb. 19.

Codorus Creek at Spring Grove, Pa.

Location.- Water-stage recorder, lat. 39°52'10", long. 76°51'55", at highway bridge at Spring Grove, York County, half a mile downstream from Bunch Creek. Datum of gage is 436.43 feet above mean sea level (unadjusted).

Drainage area.- 74.3 square miles.

Records available.- March 1932 to September 1940 in reports of U. S. Geological Survey; April 1929 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 10 years (1929-31, 1932-40), 77.3 second-feet.

Extremes.- Maximum discharge during year, 4,880 second-feet Sept. 25 (gage height, 8.85 feet); minimum, 6.0 second-feet Dec. 25 (gage height, 0.51 foot); minimum daily, 11 second-feet Aug. 4, 5.

1929-40: Maximum discharge, 11,200 second-feet Aug. 23, 1933 (gage height, 11.84 feet), by computation of flow over dam upstream; minimum discharge recorded, 0.5 second-foot Aug. 13, 1939 (gage height, 0.19 foot); minimum daily discharge, 2.0 second-feet Sept. 20, 1936.

Remarks.- Records good except those for period of ice effect, those for periods of partial or no gage-height record, and those based on daily gage readings, all of which are fair. Flow regulated at low stages by paper mill upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	196	96	18	14	15	66	96	128	107	30	14	352
2	239	49	26	17	18	61	77	154	69	24	13	76
3	197	39	32	14	15	260	77	128	56	28	13	53
4	56	34	22	15	15	792	196	117	50	53	11	42
5	40	54	20	16	18	254	e99	104	46	30	11	37
6	31	60	20	13	25	193	e93	94	44	26	478	31
7	26	42	20	14	34	154	e86	92	41	23	g689	28
8	22	38	17	15	25	134	e411	86	64	19	41	28
9	21	31	16	16	26	119	496	85	44	19	22	75
10	18	30	18	15	58	105	252	79	40	20	a16	33
11	17	27	21	16	a55	90	196	77	41	24	a12	27
12	16	27	18	18	52	78	212	72	40	22	g14	25
13	17	24	23	19	40	77	186	71	37	21	g13	23
14	15	24	30	115	245	240	158	67	33	18	g14	22
15	14	23	20	154	103	545	141	62	31	16	g20	22
16	16	22	20	50	76	220	146	88	30	15	g16	26
17	16	21	20	36	62	183	137	97	28	230	a18	21
18	14	21	18	b30	58	159	130	68	34	184	a21	18
19	13	21	17	b26	533	142	187	62	36	27	g23	18
20	14	19	86	b23	332	124	1,710	72	28	20	19	18
21	17	19	57	b21	212	112	1,000	69	27	17	14	19
22	46	19	32	b19	142	105	500	60	26	15	13	24
23	17	18	26	b17	111	92	350	58	26	30	14	17
24	14	18	24	b16	99	83	286	58	29	38	13	23
25	16	18	21	b15	98	78	236	67	26	22	14	2,210
26	16	18	21	b14	74	75	206	71	23	18	60	285
27	19	18	19	14	68	77	180	72	22	27	68	113
28	51	18	22	13	67	77	159	63	88	185	89	83
29	22	18	22	13	67	74	144	55	68	30	47	67
30	22	18	23	14		83	134	51	28	24	36	58
31	149		19	14		127		74		17	447	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,387	239	13	44.7	0.602	0.69
November	884	96	18	29.5	.397	.44
December	768	86	16	24.8	.334	.38
Calendar year 1939	25,704.6	790	2.5	70.4	.948	12.83
January	806	154	13	26.0	.350	.40
February	2,743	533	15	94.6	1.27	1.37
March	4,979	792	61	161	2.17	2.49
April	8,281	1,710	86	276	3.71	4.14
May	2,501	154	51	80.7	1.09	1.25
June	1,262	107	22	42.1	.567	.63
July	1,272	230	15	41.0	.552	.64
August	2,293	689	11	74.0	.996	1.15
September	3,874	2,210	17	129	1.74	1.94
Water year 1939-40	31,050	2,210	11	84.8	1.14	15.52

Peak discharge.- Mar. 4 (7 a.m.) 1,490 sec.-ft.; Mar. 15 (1:30 a.m.) 1,270 sec.-ft.; Apr. 20 (2 p.m.) 2,480 sec.-ft.; Aug. 7 (2 a.m.) 2,410 sec.-ft.; Sept. 25 (3:30 p.m.) 4,880 sec.-ft.

a No gage-height record; discharge computed on basis of records for nearby stations.

b Stage-discharge relation affected by ice.

e Partial gage-height record; discharge computed on basis of fragmentary record and records for nearby stations.

g Discharge based on gage readings made once daily.

Codorus Creek near York, Pa.

Location.- Water-stage recorder, lat. 39°56'45", long. 76°45'20", 0.9 mile upstream from Richland Avenue Bridge, 1.9 miles downstream from South Branch of Codorus Creek, and 2 miles southwest of York, York County. Datum of gage is 356.39 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 222 square miles.

Records available.- August to September 1940.

Extremes.- Maximum discharge during period, 7,060 second-feet Sept. 25 (gage height, 11.82 feet), from rating curve extended above 1,250 second-feet; minimum, 12 second-feet Aug. 3 (gage height, 1.97 feet); minimum daily, 34 second-feet Aug. 3, 4.

Maximum stage known, about 24.0 feet, from floodmark 500 feet downstream, Aug. 23, 1933 (discharge not determined).

Remarks.- Records good except those for extremely high stages, which are fair. Flow regulated at low stages by mills and pumping plant upstream. Records of daily discharge do not include water diverted upstream for municipal supply of York.

Cooperation.- Record of monthly diversion furnished by York Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											38	1,010
2											37	215
3											34	150
4											34	115
5											38	97
6											158	86
7											1,190	77
8											127	79
9											77	192
10											64	96
11											49	73
12											54	68
13											47	66
14											53	60
15											82	60
16											50	74
17											51	62
18											58	56
19											70	54
20											62	49
21											46	50
22											41	56
23											41	59
24											40	57
25											40	3,160
26											142	1,780
27											132	332
28											245	233
29											143	187
30											102	166
31											570	

Month	Observed				Diversion	Adjusted for diversion**		
	Second-foot-days	Maximum	Minimum	Mean	(Mean)	Mean	Per square mile	Run-off in inches
October								
November								
December								
Calendar year								
January								
February								
March								
April								
May								
June								
July								
August	3,915	1,190	34	126	16.0	142	0.640	0.74
September	8,819	3,160	49	294	14.3	308	1.39	1.55
Water year								

** Adjusted for diversion of municipal supply for York.

South Branch of Codorus Creek near York, Pa.

Location.- Water-stage recorder, lat. 39°55'10", long. 76°45'00", just downstream from dam of pumping station of York Water Co., half a mile upstream from mouth, and 3 miles southwest of York, York County. Datum of gage is 373.03 feet above mean sea level (general adjustment of 1907).
Drainage area.- 117 square miles.
Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; May 1925 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.- 13 years (1927-40), 132 second-feet (adjusted).
Extremes.- Maximum discharge during year, 4,410 second-feet Sept. 25 (gage height, 9.02 feet); minimum, 7.8 second-feet Nov. 9; minimum daily, 17 second-feet Aug. 3.
1925-40: Maximum discharge, 19,300 second-feet Aug. 23, 1933 (gage height, 17.97 feet, from floodmark in gage house), by contracted-opening method; minimum, 0.8 second-foot Aug. 28, 1935, Nov. 19, 1936; minimum daily, 5.5 second-feet Sept. 24, 1936.
Remarks.- Records fair except those for periods of ice effect and those for period of no gage-height record, all of which are poor. Flow regulated at low stages by pumping plant upstream. Records of daily discharge do not include water diverted upstream for municipal supply of York.
Cooperation.- Record of monthly diversion furnished by York Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	272	166	33	27	21	88	114	224	178	52	19	365
2	281	80	46	26	23	80	86	261	122	45	18	56
3	267	52	57	25	24	318	87	210	102	49	17	38
4	105	47	39	24	23	1,080	248	191	91	88	18	30
5	73	66	37	24	30	357	140	173	85	57	20	24
6	60	97	30	23	44	257	114	164	81	48	108	20
7	50	63	33	23	53	212	106	155	73	44	369	20
8	44	57	27	22	37	180	417	150	76	42	42	20
9	38	51	31	22	32	160	993	145	76	37	31	95
10	35	41	33	22	55	140	392	140	72	37	27	41
11	36	38	41	23	86	120	297	135	75	36	20	31
12	35	42	33	27	50	101	326	128	73	39	28	30
13	39	37	40	36	49	100	326	118	72	42	23	27
14	35	43	50	133	258	182	263	112	62	40	29	25
15	35	39	36	377	116	832	232	106	60	35	34	25
16	39	35	33	89	82	332	242	132	62	30	24	32
17	88	34	35	65	69	269	224	173	64	31	31	28
18	39	33	33	55	68	228	199	120	85	46	37	26
19	24	35	34	45	950	203	267	112	80	26	40	25
20	25	35	105	40	530	175	1,850	105	69	25	35	21
21	30	34	88	35	318	157	1,700	135	66	21	27	24
22	103	31	42	31	212	150	998	105	66	22	26	24
23	35	36	39	28	160	131	694	99	68	28	25	24
24	27	33	38	26	140	120	556	100	69	54	26	32
25	27	a32	31	24	135	112	463	108	67	30	28	2,080
26	29	a31	40	23	108	101	392	207	58	22	79	672
27	31	a30	27	22	100	100	340	152	49	26	76	135
28	73	29	35	22	92	99	299	140	85	161	125	95
29	40	30	38	21	85	95	259	108	189	49	67	75
30	38	26	37	21		106	232	104	55	32	53	68
31	163		30	*21		152		148		25	261	

Month	Observed				Diversion (Mean)	Adjusted for diversion.**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	2,216	281	24	71.5	14.2	85.7	0.732	0.84
November	1,403	166	26	46.8	14.2	61.0	.521	.58
December	1,251	105	27	40.4	13.8	54.2	.463	.53
Calendar year 1939	40,756	988	15	112	14.1	126	1.08	14.58
January	1,402	377	21	45.2	14.9	60.1	.514	.59
February	3,950	950	21	136	14.2	150	1.28	1.38
March	6,737	1,080	80	217	13.4	230	1.97	2.27
April	12,856	1,850	86	429	13.4	442	3.78	4.22
May	4,460	261	99	144	13.7	158	1.35	1.56
June	2,430	189	49	81.0	14.2	95.2	.814	.91
July	1,319	161	21	42.5	15.6	58.1	.497	.57
August	1,763	369	17	56.9	16.0	72.9	.623	.72
September	4,208	2,080	20	140	14.3	154	1.32	1.47
Water year 1939-40	43,995	2,080	17	120	14.3	134	1.15	15.64

Peak discharge.- Feb. 19 (8:30 p.m.) 1,210 sec.-ft.; Mar. 4 (8:30 p.m.) 1,590 sec.-ft.; Mar. 15 (5:30 a.m.) 1,470 sec.-ft.; Apr. 9 (2 a.m.) 1,380 sec.-ft.; Apr. 20 (5 p.m.) 2,610 sec.-ft.; Sept. 25 (6:50 p.m.) 4,410 sec.-ft.
* Winter discharge measurement made on this day.
** Adjusted for diversion of municipal supply for York.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Jan. 2-12, Jan. 19 to Feb. 5.

Conestoga Creek at Lancaster, Pa.

Location.- Water-stage recorder and concrete control, lat. 40°03'00", long. 76°16'40", at Pennsylvania Railroad bridge, 500 feet downstream from diversion dam of city waterworks and three-quarters of a mile east of Lancaster, Lancaster County. Datum of gage is 244.74 feet above mean sea level (general adjustment of 1907).
Drainage area.- 322 square miles.
Records available.- September 1928 to September 1940.
Average discharge.- 10 years (1928-31, 1933-40), 358 second-feet (adjusted).
Extremes.- Maximum discharge during year, 6,960 second-feet Apr. 9 (gage height, 9.35 feet), from rating curve extended above 4,000 second-feet; minimum, 36 second-feet Sept. 22 (gage height, 2.68 feet); minimum daily, 62 second-feet Aug. 25.
1928-40: Maximum discharge, 22,800 second-feet Aug. 24, 1933 (gage height, 17.52 feet, from floodmark in recorder shelter), by slope-area method; probably no flow at times; minimum daily discharge observed, 9 second-feet Oct. 14, 1931, Sept. 15, 23, 1932.
Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by waterworks. Records of daily discharge do not include water diverted upstream for municipal supply of Lancaster.
Cooperation.- Record of diversion furnished by city of Lancaster.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	536	624	106	b110	b83	134	624	610	536	197	116	571
2	482	250	113	b100	b82	116	474	644	725	188	106	254
3	1,300	197	220	b95	b81	520	452	624	457	172	102	160
4	368	152	197	b90	b80	3,470	874	565	394	242	78	142
5	248	160	145	b88	b80	1,450	590	515	364	221	108	116
6	207	410	129	b86	b83	1,060	480	480	342	178	103	106
7	169	231	121	b84	b90	872	436	452	310	154	124	96
8	157	181	113	b82	b88	707	1,160	425	294	163	132	80
9	166	163	100	b81	b86	685	4,310	419	290	157	106	122
10	142	151	89	b80	b100	603	1,420	399	382	140	91	133
11	128	137	119	b80	280	515	1,120	379	307	140	75	118
12	123	129	129	b81	244	452	1,240	374	286	154	94	104
13	123	145	113	b85	182	436	1,520	374	271	154	104	93
14	106	137	118	b120	299	468	1,060	350	248	137	164	86
15	100	123	140	829	152	3,730	920	337	227	148	110	71
16	110	123	121	314	179	1,350	857	346	227	134	103	85
17	116	123	108	197	174	968	788	446	221	146	85	98
18	100	99	123	174	175	976	736	374	224	194	78	78
19	100	108	126	151	350	849	803	332	234	134	122	89
20	108	129	264	b140	1,520	728	3,260	332	278	115	126	77
21	92	121	589	b130	1,060	664	2,190	1,290	224	106	110	67
22	92	113	239	*b125	685	603	1,520	477	191	121	93	65
23	121	100	178	b120	498	527	1,200	374	201	126	82	81
24	118	116	151	b110	419	457	1,060	355	217	224	71	90
25	98	110	137	b105	436	463	968	378	217	154	62	1,520
26	99	91	160	b98	389	425	872	1,090	204	126	103	1,550
27	92	113	141	b92	332	430	788	618	201	122	145	310
28	128	113	138	b89	142	425	721	498	217	765	226	214
29	160	106	134	b87	137	425	678	452	342	191	222	178
30	134	103	134	b85		425	630	384	197	148	148	181
31	280		121	b84		1,040		584		123	136	

Month	Observed				Diversion (Mean)	Adjusted for diversion.**		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	6,303	1,300	92	203	10.8	214	0.665	0.77
November	4,858	624	91	162	10.5	172	.534	.60
December	4,816	589	89	155	9.84	165	.512	.59
Calendar year 1939	131,067	3,730	50	359	10.1	369	1.15	15.58
January	4,192	829	80	135	10.3	145	.450	.52
February	8,506	1,520	80	293	10.1	303	.941	1.01
March	25,973	3,750	116	838	9.60	848	2.63	3.03
April	33,751	4,310	436	1,125	10.1	1,135	3.52	3.93
May	15,277	1,290	332	493	10.4	503	1.56	1.80
June	8,828	728	191	294	10.7	305	.947	1.06
July	5,474	765	106	177	11.2	188	.584	.67
August	3,525	226	62	114	11.0	125	.388	.45
September	6,935	1,550	65	231	10.7	242	.752	.84
Water year 1939-40	128,438	4,310	62	351	10.4	361	1.12	15.27

Peak discharge.- Mar. 4 (11:30 a.m.) 4,280 sec.-ft.; Mar. 15 (1 p.m.) 5,470 sec.-ft.; Apr. 9 (7:30 a.m.) 6,960 sec.-ft.; Apr. 20 (7 p.m.) 5,160 sec.-ft.; Sept. 26 (1 a.m.) 4,420 sec.-ft.
* Winter discharge measurement made on this day.
** Adjusted for diversion of municipal supply for Lancaster.
b Stage-discharge relation affected by ice.

POTOMAC RIVER BASIN

POTOMAC RIVER BASIN

Evitts Creek near Bedford Valley, Pa.

Location.- Water stage recorder and concrete control, lat. 39°47'23", long. 78°38'48", 2 miles upstream from Thomas W. Koon Dam, 3 miles south of Bedford Valley post office, Bedford County, and 7 miles upstream from Rock Gully Creek.

Drainage area.- 30.2 square miles.

Records available.- September 1932 to September 1940.

Extremes.- Maximum discharge during year, 631 second-feet Mar. 31 (gage height, 3.12 feet); minimum discharge, 2.9 second-feet Aug. 13, 14, 22, 23 (gage height, 1.10 feet); minimum gage height, 0.90 foot Jan. 10, 11, affected by ice.
1932-40: Maximum discharge, about 5,240 second-feet Mar. 17, 1936 (gage height, 7.13 feet), by slope-area method; minimum, 1.2 second-feet July 27, 1934 (gage height, 0.96 feet).
Maximum stage known, about 8 feet, from flood mark, date unknown (discharge not determined.

Remarks.- Records good except those for periods of ice effect and those for period of doubtful gage-height record, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	18	5.2	6.0	7.0	26	151	41	55	21	4.8	13
2	39	9.8	6.2	5.5	7.0	51	105	42	46	15	4.4	8.0
3	21	7.4	8.4	6.0	7.0	194	95	37	42	13	4.0	6.8
4	10	6.5	6.8	5.5	6.5	138	190	34	36	13	4.0	6.0
5	8.0	8.0	6.2	6.0	7.0	96	103	30	32	11	3.8	5.2
6	6.5	17	6.2	5.5	8.0	76	85	28	28	10	3.6	4.8
7	5.7	22	6.5	5.5	12	64	74	27	25	9.8	5.5	4.4
8	5.2	21	6.2	5.5	25	58	136	27	34	9.4	4.6	8.4
9	5.0	14	5.7	5.5	24	54	121	26	101	9.0	4.0	7.7
10	4.8	11	5.7	5.5	35	45	91	23	41	8.7	3.4	6.0
11	4.4	9.8	7.1	5.5	67	40	80	22	52	8.7	3.2	5.0
12	4.4	8.7	6.0	6.0	64	36	72	21	99	9.4	3.0	4.6
13	4.4	8.0	5.7	6.0	71	35	64	21	43	8.7	3.0	4.6
14	4.2	7.4	6.0	13	57	43	55	20	32	7.7	3.2	4.4
15	4.0	7.1	5.5	75	47	50	52	18	28	7.1	4.8	4.2
16	4.0	6.8	5.5	22	49	40	54	22	25	9.0	4.2	4.8
17	4.2	6.5	5.5	14	41	49	69	18	21	8.4	4.8	4.6
18	4.0	6.5	5.5	15	37	67	57	18	22	7.7	4.6	4.2
19	4.0	6.8	5.5	14	d42	132	69	17	23	6.8	4.4	4.2
20	4.2	6.5	12	11	d49	123	455	28	18	6.2	3.8	4.0
21	4.2	6.2	17	10	d45	103	257	22	15	5.7	3.2	3.8
22	4.6	6.2	11	9.0	*d41	89	157	18	14	5.5	3.0	4.2
23	4.4	6.8	8.4	9.0	d38	72	113	18	14	5.2	2.9	4.0
24	4.2	6.5	7.0	9.0	36	60	91	18	14	5.5	3.0	3.8
25	4.4	6.0	6.5	8.5	36	52	76	23	14	5.0	3.0	29
26	5.2	5.7	7.1	8.0	30	46	65	27	13	4.6	14	14
27	8.7	5.5	6.5	7.5	28	42	57	35	12	4.8	33	7.1
28	17	5.5	8.0	7.5	27	42	50	26	38	6.5	42	6.0
29	9.4	5.5	8.0	7.0	26	42	46	25	27	6.5	14	5.2
30	6.8	5.2	7.7	7.0		152	41	26	15	7.4	10	5.0
31	11		6.8	7.0		336		58		5.5	13	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	236.9	39	4.0	7.64	0.253	0.29
November	267.9	22	5.2	8.93	.296	.33
December	221.4	17	5.2	7.14	.236	.27
Calendar year 1939	11,548.0	684	3.2	31.6	1.05	14.21
January	327.5	75	5.5	10.6	.351	.40
February	969.5	71	6.5	33.4	1.11	1.20
March	2,453	336	26	79.1	2.62	3.02
April	3,131	455	41	104	3.44	3.84
May	816	58	17	26.3	.871	1.00
June	979	101	12	32.6	1.08	1.20
July	261.8	21	4.6	8.45	.280	.32
August	222.2	42	2.9	7.17	.237	.27
September	197.0	29	3.8	6.57	.218	.24
Water year 1939-40	10,083.2	455	2.9	27.5	.911	12.38

Peak discharge.- Mar. 31 (2 a.m.) 631 sec.-ft.; Apr. 20 (8 a.m.) 615 sec.-ft.; June 9 (4 a.m.) 266 sec.-ft.
* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of gage heights, weather records, one discharge measurement, and records for Big Piney Run near Salisbury, Pa., and North Branch of Potomac River near Cumberland, Md.
Note.- Stage-discharge relation affected by ice, Dec. 24, 25, Jan. 1-14, Jan. 20 to Feb. 10.

Licking Creek near Sylvan, Pa.

Location.- Chain gage, lat. 39°43'20", long. 78°03'35", at highway bridge 200 feet north of Pennsylvania-Maryland State line, 3 miles southwest of Sylvan, Franklin County, and 10 miles upstream from mouth. Datum of gage is 434.16 feet above mean sea level (general adjustment of 1907).

Drainage area.- 158 square miles.

Records available.- June 1930 to September 1940.

Average discharge.- 10 years, 168 second-feet.

Extremes.- Maximum discharge during year, 3,300 second-feet Apr. 20; maximum gage height, 8.6 feet, from graph based on gage readings Jan. 15 (affected by ice); minimum discharge observed, 18 second-feet Aug. 14 (gage height, 1.13 feet); minimum daily discharge, 20 second-feet Aug. 12, 13.

1930-40: Maximum discharge, 20,700 second-feet Mar. 18, 1936 (gage height, 17.4 feet, from floodmark), by contracted-opening method; minimum, 3.0 second-feet Aug. 8, 1930 (gage height, 0.64 foot).

Remarks.- Records poor. Gage read twice daily.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	499	39	32	28	140	995	156	535	132	33	874
2	414	242	39	31	27	156	570	165	400	193	28	318
3	1,480	148	40	30	27	294	430	165	269	89	26	183
4	419	110	40	30	27	1,130	1,280	156	214	90	24	124
5	203	148	39	29	28	875	875	124	174	77	24	96
6	140	293	36	29	30	570	496	117	140	61	22	75
7	110	462	36	28	70	430	371	124	144	53	45	63
8	83	430	33	28	64	344	647	117	864	50	42	51
9	74	344	32	27	62	306	1,650	110	920	47	28	55
10	61	224	32	27	66	269	898	103	681	57	24	57
11	58	165	34	28	170	235	610	103	358	50	21	48
12	50	140	33	29	160	203	430	90	318	160	20	42
13	42	117	33	31	250	193	371	90	258	90	20	37
14	40	103	33	40	*350	195	306	85	183	61	25	34
15	36	89	32	500	260	245	258	80	165	49	133	31
16	33	79	29	260	240	358	246	80	140	46	48	34
17	34	74	29	180	230	318	235	85	117	49	37	31
18	32	71	28	130	220	358	203	76	156	46	33	29
19	32	66	27	100	600	532	284	71	193	45	55	28
20	31	63	37	80	800	570	2,280	69	140	37	42	27
21	29	57	93	65	785	462	2,040	67	110	32	31	26
22	29	53	71	55	532	371	1,110	63	85	34	27	26
23	29	55	48	47	371	293	695	60	85	32	25	26
24	29	52	45	42	293	224	496	60	85	59	27	24
25	28	48	42	38	246	193	371	85	88	114	23	77
26	29	45	38	35	214	165	306	103	89	70	53	124
27	31	42	36	33	203	174	258	203	110	52	146	65
28	92	41	35	31	183	156	214	246	111	41	395	45
29	103	42	35	30	165	140	183	174	326	91	284	37
30	71	40	34	29		188	165	148	162	48	148	34
31	104		33	28		1,490		206		39	196	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,129	1,480	28	133	0.842	0.97
November	4,342	499	40	145	.918	1.02
December	1,191	93	27	38.4	.243	.28
Calendar year 1939	59,875.8	2,430	7.5	164	1.04	14.09
January	2,102	500	27	67.8	.429	.49
February	6,701	800	27	231	1.46	1.58
March	11,577	1,490	140	373	2.36	2.72
April	19,273	2,280	165	642	4.06	4.54
May	3,581	246	60	116	.734	.84
June	7,620	920	85	254	1.61	1.79
July	2,094	193	32	67.5	.427	.49
August	2,085	395	20	67.3	.426	.49
September	2,721	874	24	90.7	.574	.64
Water year 1939-40	67,416	2,280	20	184	1.16	15.85

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Feb. 20.

OHIO RIVER BASIN

Allegheny River at Eldred, Pa.

Location.- Water-stage recorder, lat. 41°57'50", long. 78°23'10", at site of former highway bridge 1,000 feet upstream from Knapp Creek and half a mile north of Eldred, McKean County. Datum of gage is 1,416.20 feet above mean sea level (unadjusted).

Drainage area.- 550 square miles.

Records available.- July 1939 to September 1940.

Extremes.- Maximum discharge during year, 12,900 second-feet Apr. 5 (gage height, 18.48 feet); minimum, 44 second-feet Aug. 25 (gage height, 1.67 feet).

1939-40: Maximum discharge, that of Apr. 5, 1940; minimum, 30 second-feet Sept. 25, 26, 1939.

Remarks.- Records good except those for period of ice effect and those for periods of no or partial gage-height record, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	480	590	263	400	200	230	f7,760	1,100	705	f575	f75	188
2	265	505	277	380	200	225	f8,660	1,240	815	f488	f68	181
3	162	442	520	360	195	230	f7,080	1,170	665	f438	f63	119
4	122	380	1,280	360	*195	350	f8,820	1,140	545	f710	f60	93
5	101	368	995	350	195	770	f12,500	1,040	475	f530	f58	79
6	94	f392	815	*350	205	710	f11,300	920	425	f425	f63	68
7	115	f430	725	340	230	650	f8,500	920	f375	f362	f89	61
8	183	830	785	330	300	590	f6,950	830	f375	317	f101	59
9	588	1,200	740	320	270	530	f7,210	860	f388	f291	f76	139
10	480	995	740	310	250	*485	7,900	785	f350	f282	f65	186
11	418	960	1,190	300	390	450	f6,460	710	311	f250	f58	124
12	380	925	1,170	300	560	430	f5,920	665	723	f264	f53	99
13	283	845	1,100	310	880	450	f6,820	665	700	f244	f50	88
14	235	800	1,200	330	650	460	f5,920	f650	f488	f196	50	82
15	207	725	1,030	1,020	530	430	4,720	620	f388	f173	50	80
16	179	680	890	1,100	480	400	3,490	f665	f350	f182	50	98
17	156	680	860	700	440	400	2,530	f665	f304	f191	47	146
18	141	620	830	530	420	450	2,640	605	f278	f157	47	116
19	127	560	755	450	450	a1,000	3,420	590	f400	f138	56	92
20	126	505	1,320	400	440	a3,900	3,980	1,280	f388	f123	84	80
21	132	468	1,860	380	420	f3,770	4,370	2,040	f286	f110	77	87
22	144	442	1,620	370	380	a3,200	4,540	1,860	f256	f102	59	153
23	177	418	1,420	350	330	a2,500	4,050	1,580	f234	f 97	51	153
24	183	380	1,200	330	300	a2,100	3,230	1,310	f313	f122	46	115
25	158	355	1,020	305	285	a1,800	2,530	1,170	f579	133	45	596
26	252	318	960	290	270	1,500	2,180	1,140	f425	f111	47	710
27	518	291	700	275	255	f1,170	1,860	980	f388	f122	64	388
28	980	299	580	245	245	f920	1,540	860	f362	f135	294	282
29	1,030	287	520	225	240	f1,290	1,340	815	f725	f103	246	228
30	740	275	460	215		f*2,810	1,200	710	f605	f 89	138	191
31	605		420	205		f*4,210		665		f 78	119	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	9,761	1,030	94	315	0.573	0.66
November	16,965	1,200	275	566	1.03	1.15
December	28,245	1,860	263	911	1.66	1.91
Calendar year						
January	12,130	1,100	205	391	.711	.82
February	10,205	880	195	352	.640	.69
March	38,410	4,210	225	1,239	2.25	2.59
April	159,420	12,500	1,200	5,314	9.66	10.78
May	30,250	2,040	590	976	1.77	2.04
June	13,621	815	234	454	.825	.92
July	7,538	710	78	243	.442	.51
August	2,449	294	45	79.0	.144	.17
September	5,081	710	59	169	.307	.34
Water year 1939-40	334,075	12,500	45	913	1.66	22.58

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations downstream.
f Discharge based on partial gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 18.

Allegheny River near Kinzua, Pa.

Location.- Water-stage recorder, lat. 41°50'50", long. 78°59'30", at Pennsylvania Railroad bridge, half a mile upstream from Bent Run, 2 miles southwest of Kinzua, Warren County, and 2.3 miles downstream from Kinzua Creek. Datum of gage is 1,200.00 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 2,179 square miles.

Records available.- October 1935 to September 1940.

Extremes.- Maximum discharge during year, 41,900 second-feet Apr. 5 (gage height, 16.46 feet); minimum, 266 second-feet Aug. 25 (gage height, 4.83 feet).

1935-40: Maximum discharge, that of Apr. 5, 1940; minimum, 135 second-feet Sept. 15, 1936 (gage height, 4.57 feet).

Remarks.- Records good except those for period of ice effect and those for period of no gage-height record, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,110	2,700	977	1,500	950	1,350	29,700	4,470	2,740	3,290	442	800
2	1,230	2,480	1,020	1,450	940	1,400	28,700	4,860	3,180	2,960	404	798
3	892	2,160	4,640	1,420	930	1,800	27,800	4,860	2,960	2,440	379	723
4	696	1,860	9,640	1,400	920	2,900	38,300	4,600	2,500	2,360	356	612
5	645	1,690	7,180	1,380	*910	4,300	39,800	4,220	2,110	2,640	339	497
6	590	1,660	4,860	1,360	950	4,800	36,800	3,860	1,820	2,140	390	425
7	552	1,860	3,860	*1,340	1,070	4,100	32,200	3,510	1,640	1,760	419	379
8	584	2,920	3,860	1,320	1,200	3,400	29,200	3,290	1,630	1,520	379	527
9	1,980	4,990	3,740	1,300	1,250	2,900	34,700	3,180	1,470	1,470	369	687
10	2,720	4,600	3,510	1,280	1,500	*2,650	28,700	3,070	1,380	1,820	360	662
11	2,290	4,340	5,680	1,260	2,200	2,400	23,200	2,760	4,820	1,480	339	670
12	1,910	4,100	5,680	1,240	3,300	2,300	25,400	2,520	5,400	1,320	311	679
13	1,500	3,510	5,120	1,240	4,600	2,350	24,500	2,480	4,100	1,210	308	597
14	1,170	3,070	5,540	1,400	4,200	2,400	20,100	2,420	2,960	1,080	311	537
15	988	2,820	4,730	2,300	3,600	2,200	16,600	2,290	2,140	966	296	484
16	869	2,680	3,980	3,800	3,200	2,100	13,300	2,350	1,710	1,030	289	629
17	789	2,720	3,860	3,500	2,900	2,100	11,400	2,480	1,440	977	300	723
18	687	2,520	3,860	3,100	2,800	2,250	11,800	2,420	1,370	890	289	662
19	612	2,290	3,620	2,600	2,900	7,500	14,600	2,330	2,460	798	330	574
20	590	2,050	7,450	2,350	2,650	14,000	15,000	3,580	2,420	713	330	504
21	567	1,860	9,640	2,150	2,450	a13,000	20,100	4,860	1,910	645	339	454
22	582	1,710	7,810	2,000	2,250	a11,000	18,400	5,260	1,470	605	322	454
23	605	1,610	6,110	1,900	2,050	a8,600	15,000	4,990	1,260	582	311	484
24	628	1,480	5,260	1,750	1,800	a6,800	12,200	9,000	4,160	637	293	524
25	670	1,380	4,470	1,580	1,700	a5,400	9,990	6,710	6,860	854	269	1,900
26	880	1,240	3,860	1,400	1,600	4,860	8,630	5,400	4,610	751	293	3,620
27	1,100	1,130	3,400	1,280	1,500	4,730	7,490	5,260	3,180	723	326	2,700
28	5,370	1,080	2,640	1,190	1,450	4,100	6,260	4,470	2,880	590	612	1,710
29	7,180	1,050	2,200	1,100	1,400	5,290	5,400	3,740	3,980	537	765	1,280
30	4,470	1,020	1,900	1,040		13,400	4,730	3,180	3,740	567	1,030	1,050
31	3,180		1,700	980		23,600		2,820		484	818	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	47,636	7,180	552	1,537	0.705	0.81
November	70,580	4,990	1,020	2,353	1.08	1.20
December	141,797	9,640	977	4,574	2.10	2.42
Calendar year 1939	1,165,112	30,800	165	3,192	1.46	19.89
January	52,910	3,800	980	1,707	.783	.90
February	59,170	4,600	910	2,040	.936	1.01
March	169,980	23,600	1,350	5,483	2.52	2.90
April	610,000	39,800	4,730	20,330	9.33	10.41
May	121,240	9,000	2,290	3,911	1.79	2.06
June	84,300	6,860	1,260	2,810	1.29	1.44
July	39,839	3,290	484	1,285	.590	.68
August	12,318	1,030	269	397	.182	.21
September	26,345	3,620	379	878	.403	.45
Water year 1939-40	1,436,115	39,800	269	3,924	1.80	24.49

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations at Redhouse and Franklin.
Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 20.

Allegheny River at Franklin, Pa.

Location.- Water-stage recorder, lat. 41°23'25", long. 79°49'10", at Eighth Street Bridge in Franklin, Venango County, 1,000 feet downstream from French Creek. Datum of gage is 955.92 feet above mean sea level (unadjusted).

Drainage area.- 5,982 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; April 1905 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 22 years (1918-40), 9,746 second-feet.

Extremes.- Maximum discharge during year, 99,000 second-feet Apr. 4 (gage height, 16.98 feet); minimum, 898 second-feet Aug. 18, 25 (gage height, 2.11 feet).

1905-40: Maximum discharge, 191,000 second-feet Mar. 26, 1913, from rating curve extended above 110,000 second-feet; maximum gage height, 26.0 feet, present datum, Feb. 27, 1917 (caused by ice jam); minimum discharge, 334 second-feet July 30, 1934 (gage height, 1.63 feet).

Maximum free-flow stage known, 25.0 feet, present datum, Mar. 17, 1865 (discharge, 196,000 second-feet, from rating curve extended above 110,000 second-feet).

Remarks.- Records good except those for periods of ice effect and those for period of no gage-height record, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,960	6,630	2,480	3,540	b3,000	5,150	83,000	10,800	16,600	11,300	1,500	2,800
2	2,170	5,480	2,500	2,720	b2,900	5,150	79,000	11,900	16,600	9,170	1,330	2,720
3	2,190	4,880	2,950	2,540	b2,800	5,860	72,000	13,000	15,000	7,570	1,240	2,350
4	1,900	4,880	14,400	b2,550	b2,750	10,800	96,000	13,000	11,900	6,050	1,150	2,100
5	1,500	4,600	20,500	b2,650	b2,700	15,500	95,000	11,700	9,170	5,320	1,140	1,870
6	1,300	4,190	16,200	b2,750	b2,850	17,700	85,000	10,600	7,570	5,150	1,150	1,580
7	1,190	3,930	12,400	b2,850	b3,300	16,600	71,000	9,780	6,420	4,360	1,500	1,360
8	1,580	4,060	9,920	b3,000	b3,800	14,000	60,000	8,960	6,240	3,820	1,680	1,220
9	2,190	6,100	9,290	b3,050	*b4,650	12,400	72,000	8,360	6,240	3,470	1,520	1,320
10	3,930	9,080	8,680	*b3,100	b6,000	10,600	66,300	8,160	5,150	3,580	1,280	3,080
11	5,030	8,480	11,800	b3,350	b12,000	8,960	53,300	7,560	6,230	4,360	1,140	2,330
12	4,740	8,280	17,200	b3,600	b17,000	7,180	55,800	6,610	19,900	4,080	1,040	2,030
13	4,190	7,710	15,200	b4,200	21,700	6,800	56,600	6,050	17,200	3,470	960	1,920
14	3,280	6,630	15,200	6,370	22,300	7,380	48,500	6,050	14,000	2,970	1,080	1,840
15	2,680	5,960	14,200	12,100	17,700	8,160	40,200	5,860	11,500	2,700	1,040	1,870
16	2,290	5,480	11,900	13,200	14,000	6,990	34,500	6,240	9,780	3,470	1,020	1,840
17	2,010	5,330	10,600	11,400	11,500	6,050	31,800	6,800	7,760	3,120	972	1,870
18	1,830	5,330	10,600	9,500	11,000	6,710	32,400	6,610	5,860	2,890	935	2,000
19	1,650	5,030	10,600	a8,100	10,400	23,300	38,700	6,240	8,160	2,620	1,150	1,890
20	1,550	4,600	15,500	a7,300	11,000	35,200	42,400	6,420	10,400	2,390	1,140	1,730
21	1,470	4,190	26,900	a6,600	11,000	31,100	54,100	8,360	9,380	2,140	1,260	1,620
22	1,440	3,800	23,900	a5,900	10,200	27,200	50,100	9,170	7,380	1,960	1,200	1,520
23	1,440	3,540	17,800	5,330	8,960	20,500	40,900	9,380	5,500	1,860	1,080	1,470
24	1,490	3,370	13,700	4,880	8,160	14,500	32,400	18,900	4,980	1,800	960	1,550
25	1,620	3,200	11,000	4,740	7,180	11,700	26,600	27,200	11,200	1,960	910	2,410
26	1,720	3,000	10,100	4,320	6,420	10,800	21,700	22,300	13,500	1,890	1,150	4,530
27	2,690	2,770	8,280	4,060	5,680	10,800	18,200	22,300	10,800	2,500	1,300	6,610
28	6,680	2,650	6,980	3,800	5,320	10,600	15,500	21,100	8,760	2,420	1,520	4,930
29	15,000	2,590	5,960	b3,600	5,320	16,500	13,000	16,000	12,800	1,980	1,600	3,580
30	13,700	2,500	5,480	b3,350		40,700	11,700	13,000	12,400	1,730	2,050	2,820
31	9,080		4,740	b3,200		69,000		14,600		1,620	2,460	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	105,490	15,000	1,190	3,403	0.569	0.66
November	148,270	9,080	2,500	4,942	.826	.92
December	366,960	26,900	2,480	11,840	1.98	2.28
Calendar year 1939	3,280,578	76,000	537	8,988	1.50	20.41
January	157,650	13,200	2,540	5,085	.850	.98
February	251,590	22,300	2,700	8,676	1.45	1.56
March	493,890	69,000	5,150	15,930	2.66	3.07
April	1,497,700	96,000	11,700	49,920	8.35	9.32
May	353,010	27,200	5,860	11,390	1.90	2.19
June	308,380	19,900	4,980	10,280	1.72	1.92
July	113,720	11,300	1,620	3,668	.613	.71
August	39,457	2,460	910	1,273	.213	.25
September	70,760	6,610	1,220	2,359	.394	.44
Water year 1939-40	3,906,877	96,000	910	10,670	1.78	24.30

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for nearby stations.
b Stage-discharge relation affected by ice.

Allegheny River at Parkers Landing, Pa.

Location.- Water-stage recorder, lat. 41°06'05", long. 79°40'45", at highway bridge at Parkers Landing, Armstrong County, 1.1 miles downstream from Clarion River. Datum of gage is 845.14 feet above mean sea level (general adjustment of 1907).

Drainage area.- 7,671 square miles.

Records available.- October 1932 to September 1940.

Extremes.- Maximum discharge during year, 115,000 second-feet Apr. 4; maximum gage height, 24.95 feet Mar. 20 (caused by ice jam); minimum discharge, 1,190 second-feet Aug. 25 (gage height, 1.18 feet).

1932-40: Maximum discharge, 149,000 second-feet Jan. 25, 1937; maximum gage height, 27.85 feet Mar. 5, 1934 (caused by ice jam); minimum discharge, 409 second-feet July 30, 1934 (gage height, 0.67 foot).

Maximum stage known, 29.0 feet Mar. 17, 1865 (discharge, 250,000 second-feet, from rating curve extended above 125,000 second-feet).

Remarks.- Records good except those for period of ice effect, which are fair. Some regulation at low stages from operation of hydroelectric plant on Clarion River.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,860	9,460	3,170	3,500	4,600	7,300	101,000	13,400	22,600	17,300	2,080	3,460
2	2,740	8,110	3,200	3,250	4,800	7,200	91,500	14,800	21,000	12,900	2,060	3,690
3	2,940	7,020	3,270	3,000	4,700	7,800	80,300	15,300	18,500	11,300	1,510	3,640
4	2,790	6,320	8,040	*2,900	4,300	16,000	102,000	15,800	15,800	8,780	1,400	3,080
5	2,350	5,680	21,600	3,200	3,900	21,000	109,000	13,800	12,400	7,000	1,340	2,440
6	1,820	5,680	18,800	3,600	4,100	23,500	96,200	13,400	10,000	6,820	1,440	2,310
7	1,540	5,620	14,300	4,000	4,300	23,000	79,400	12,400	8,470	5,990	1,620	2,170
8	1,430	5,520	12,000	4,000	4,600	20,000	65,200	11,300	8,090	5,220	1,750	1,770
9	2,510	6,320	10,900	4,000	5,500	17,000	80,300	10,600	9,250	4,780	1,880	3,110
10	5,250	10,200	9,850	4,200	7,300	14,500	76,700	10,400	8,090	4,500	1,730	4,680
11	5,830	10,200	10,700	4,000	12,000	12,500	61,000	9,850	7,530	5,220	1,510	4,000
12	5,680	9,650	17,800	4,600	18,000	10,500	61,800	8,660	18,700	5,680	1,290	2,980
13	5,220	9,050	17,800	4,900	27,000	9,500	65,200	7,900	20,000	5,220	1,290	2,850
14	4,360	8,470	16,300	5,000	27,500	9,500	55,300	8,280	16,800	4,500	1,290	2,780
15	3,510	7,350	17,300	11,000	23,500	11,000	44,600	8,090	13,400	3,640	1,380	2,190
16	2,940	7,000	14,800	15,000	18,000	10,500	38,200	8,470	11,300	4,280	1,320	2,470
17	3,040	7,000	12,000	14,500	15,000	9,200	34,800	8,860	9,250	4,590	1,290	2,490
18	2,690	6,940	11,300	12,000	13,500	9,200	37,500	8,470	9,110	4,090	1,340	2,470
19	2,280	5,990	12,400	8,200	12,800	28,500	46,800	7,720	10,400	3,660	1,290	2,560
20	2,070	5,520	16,100	7,700	14,000	41,000	59,600	7,900	11,600	3,180	1,750	2,610
21	1,980	5,370	30,300	6,800	14,000	42,500	70,400	10,200	11,300	2,750	1,650	2,350
22	1,910	5,080	29,100	6,100	13,500	36,000	64,400	11,600	9,450	2,540	1,530	1,950
23	1,710	4,930	23,800	5,900	12,000	30,000	51,000	11,900	7,530	2,440	1,440	1,790
24	1,930	4,120	17,000	6,000	11,200	20,000	39,600	17,900	6,480	2,440	1,320	1,950
25	2,020	4,250	13,800	6,100	11,000	16,500	32,200	29,700	8,930	2,380	1,210	3,080
26	2,300	3,690	12,400	5,900	8,000	14,500	26,700	25,500	17,800	2,560	1,320	4,040
27	5,350	3,380	10,900	5,600	7,200	15,500	22,100	25,500	14,300	2,900	1,880	7,140
28	15,800	3,460	9,000	5,100	6,900	17,500	18,900	26,100	11,100	3,150	2,030	7,110
29	17,300	3,350	8,400	4,400	7,000	21,000	16,800	21,000	12,800	2,730	1,970	4,930
30	18,800	3,170	7,400	4,400		51,700	14,800	16,300	15,800	2,980	2,100	3,850
31	13,600		6,000	4,600		84,500		20,700		2,850	2,920	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	146,550	18,800	1,430	4,727	0.616	0.71
November	187,900	10,200	3,170	6,263	.816	.91
December	419,730	30,300	3,170	13,540	1.77	2.04
Calendar year 1939	3,974,235	82,100	654	10,890	1.42	19.25
January	183,450	15,000	2,900	5,918	.771	.89
February	320,200	27,500	3,900	11,040	1.44	1.55
March	658,400	84,500	7,200	21,240	2.77	3.19
April	1,743,300	109,000	14,800	58,110	7.58	8.46
May	431,800	29,700	7,720	13,930	1.82	2.10
June	377,780	22,600	6,480	12,590	1.64	1.83
July	158,370	17,300	2,380	5,109	.666	.77
August	49,930	2,920	1,210	1,611	.210	.24
September	95,940	7,140	1,770	3,198	.417	.47
Water year 1939-40	4,773,350	109,000	1,210	13,040	1.70	23.16

Peak discharge.- Apr. 4 (9 p.m.) 115,000 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 28 to Mar. 29.

Allegheny River near Rimer, Pa.

Location.- Water-stage recorder, lat. 40°57'30", long. 79°32'50", 800 feet upstream from dam 9, 1.7 miles downstream from Redbank Creek, 2.0 miles upstream from Rimer, Armstrong County, and 6.8 miles upstream from Mahoning Creek. Datum of gage is 810.75 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 8,389 square miles.

Records available.- February 1939 to September 1940.

Extremes.- 1939: Maximum discharge during period February to September, 88,700 second-feet Feb. 21 (gage height, 18.94 feet); minimum, 738 second-feet Sept. 3 (gage height, 11.59 feet).
1939-40: Maximum discharge during water year, 116,000 second-feet Apr. 4 (gage height, 20.30 feet); minimum, 1,240 second-feet Aug. 17, 25 (gage height, 11.79 feet).

Remarks.- Records good except those for period of ice effect and those for periods of doubtful gage-height record, all of which are fair. Some regulation from operation of hydroelectric plant on Clarion River.

Cooperation.- Gage-height record and results of 21 discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						52,100	47,300	9,350	3,770	2,200	6,330	858
2						48,900	44,300	9,350	3,530	2,950	5,850	836
3						42,800	40,000	8,610	3,240	2,680	4,780	814
4						34,600	32,600	7,420	3,330	2,200	3,870	880
5						31,400	27,000	6,700	3,580	1,980	5,070	968
6						34,600	24,000	6,330	3,670	1,900	4,180	1,130
7						37,200	26,400	5,550	3,330	1,790	2,910	1,020
8						34,600	25,200	5,190	2,860	1,940	2,370	990
9						29,400	21,800	5,370	3,050	1,900	2,150	1,130
10						27,600	19,100	5,670	2,640	2,410	2,020	1,270
11					38,600	24,000	20,200	6,330	2,590	2,500	2,070	1,270
12					34,600	28,300	25,200	6,150	2,640	1,940	1,900	d1,200
13					29,400	50,500	27,000	5,610	2,860	1,790	1,830	d1,170
14					25,800	45,800	25,200	4,500	3,050	1,710	1,680	d1,150
15					31,300	40,000	29,400	4,290	2,820	2,660	1,570	d1,150
16					45,800	37,200	48,900	4,400	2,680	2,720	1,600	d1,100
17					37,200	34,600	44,300	4,240	2,640	2,460	1,470	d1,070
18					30,700	30,000	37,200	4,030	2,460	2,370	1,300	d1,030
19					27,600	23,000	33,300	3,870	2,410	1,940	1,210	d 990
20					44,800	19,100	31,400	3,620	2,540	1,570	1,270	d 940
21					85,100	18,000	28,800	3,330	2,410	1,370	1,240	d 900
22					77,900	16,000	25,200	4,560	2,500	1,190	1,270	d 870
23					58,700	14,500	20,800	6,640	2,320	1,130	1,240	d 830
24					44,300	13,600	17,500	6,640	2,550	1,070	1,190	d 810
25					34,600	14,100	15,800	5,550	3,920	1,020	1,050	d 800
26					30,000	19,100	14,100	5,250	3,140	990	1,020	d 800
27					30,700	27,600	13,200	4,840	2,640	1,020	990	d 940
28					35,900	40,000	11,900	3,770	2,640	990	946	1,340
29						40,000	11,000	3,380	2,200	1,050	924	1,750
30						35,900	10,200	3,980	1,980	1,840	880	2,310
31						47,300		3,720		5,060	858	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October						
November						
December						
Calendar year						
January						
February (11-28)	743,000	85,100	25,800	41,280	4.92	3.29
March	991,800	52,100	13,600	31,990	3.81	4.39
April	798,300	48,900	10,200	26,610	3.17	3.54
May	168,240	9,350	3,330	5,427	.647	.75
June	86,090	3,920	1,980	2,870	.342	.38
July	60,340	5,060	990	1,946	.232	.27
August	67,038	3,330	858	2,163	.258	.30
September	32,316	2,310	800	1,077	.128	.14
Water year						

d Doubtful gage-height record; discharge computed on basis of records for stations at Parkers Landing and Kittanning.

Allegheny River near Rimer, Pa.
(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,860	10,800	3,100	b4,100	4,890	7,770	108,000	14,400	25,800	20,200	2,320	3,580
2	2,640	8,330	3,140	b3,500	5,190	7,630	98,100	15,700	24,000	15,000	2,280	3,920
3	3,050	7,350	3,240	b3,100	4,890	8,400	85,100	17,000	21,300	12,600	1,680	3,870
4	2,860	6,760	4,640	b3,050	4,450	14,400	104,000	17,000	18,000	10,100	1,530	3,330
5	2,500	5,670	20,500	b3,350	4,000	22,400	110,000	15,400	14,100	7,490	1,470	2,590
6	1,900	5,790	20,200	b3,700	4,340	24,600	100,000	14,500	11,500	7,220	1,600	2,410
7	1,600	5,850	15,400	b4,300	4,500	24,000	83,300	13,200	9,500	6,760	1,790	2,110
8	1,470	5,490	12,600	b4,200	4,890	21,300	70,700	12,200	8,680	5,670	1,790	1,900
9	1,890	6,210	11,300	b4,100	5,610	18,600	83,300	11,400	9,580	5,250	1,980	2,730
10	4,660	9,110	10,100	b4,400	7,350	15,200	83,300	11,200	8,900	4,840	1,870	4,620
11	5,790	11,100	10,400	b4,200	11,000	13,000	67,200	10,700	8,050	5,490	1,600	5,160
12	5,850	9,820	17,500	b4,200	18,000	11,000	67,200	9,350	16,500	6,830	1,470	3,580
13	5,310	8,820	18,600	b5,100	28,200	9,660	70,700	8,050	21,800	6,330	1,440	3,050
14	4,620	8,750	17,000	b5,100	28,800	9,900	62,100	8,680	18,000	5,490	1,440	d2,900
15	3,620	7,840	18,000	10,100	24,600	11,500	50,500	8,610	14,200	4,080	1,370	d2,400
16	3,000	7,090	16,000	15,700	19,800	11,200	42,800	8,900	12,100	4,340	1,340	d2,450
17	3,000	6,960	13,200	14,700	16,000	9,420	38,600	9,420	9,740	5,250	1,300	d2,550
18	2,680	7,090	11,700	12,500	15,400	9,660	41,400	9,050	9,200	4,450	1,340	d2,550
19	2,320	6,090	12,700	8,680	13,100	28,600	53,700	8,260	13,600	3,980	1,400	d2,500
20	2,070	5,610	16,100	7,910	14,800	42,800	68,900	7,910	13,400	3,580	1,710	d2,700
21	1,980	5,730	32,600	7,090	d15,000	44,300	81,500	10,900	12,600	3,000	1,710	d2,500
22	1,900	5,370	32,600	6,330	14,500	40,000	74,300	12,600	10,500	2,680	1,500	2,110
23	1,750	5,130	26,400	d6,100	12,400	32,600	58,700	12,700	8,330	2,640	1,530	1,870
24	1,830	4,180	19,100	6,330	11,700	22,400	45,800	18,600	7,160	2,680	1,440	1,790
25	1,980	4,290	15,200	6,400	11,600	18,000	37,200	31,400	7,760	2,540	1,270	2,420
26	2,320	3,770	13,300	6,090	8,540	15,700	30,700	28,200	18,000	2,770	1,400	3,780
27	3,060	3,330	12,000	5,730	7,770	16,500	25,200	28,200	15,500	3,240	1,940	5,780
28	15,500	3,530	b9,100	5,310	7,160	18,600	21,300	30,000	12,100	3,480	2,110	7,490
29	18,000	3,330	b8,500	4,620	7,490	24,000	18,000	24,000	12,800	3,100	2,110	5,550
30	20,200	3,190	b7,500	4,620		55,800	16,000	18,600	17,500	3,240	2,110	4,180
31	14,800	3,190	b6,000	4,890		94,300		23,000		3,140	3,000	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	147,010	20,200	1,470	4,742	0.565	0.65
November	192,380	11,100	3,190	6,413	.764	.85
December	437,720	32,600	3,100	14,120	1.68	1.94
Calendar year						
January	189,500	15,700	3,050	6,113	.729	.84
February	335,770	28,800	4,000	11,580	1.38	1.49
March	703,240	94,300	7,630	22,690	2.70	3.11
April	1,897,600	110,000	16,000	63,250	7.54	8.41
May	469,130	31,400	7,910	15,130	1.80	2.08
June	410,200	25,800	7,160	13,670	1.63	1.82
July	177,460	20,200	2,540	5,725	.682	.79
August	52,840	3,000	1,270	1,705	.203	.23
September	98,270	7,490	1,790	3,276	.391	.44
Water year 1939-40	5,111,120	110,000	1,270	13,960	1.66	22.65

b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of records for stations at Parkers Landing and Kittanning.

Allegheny River at Kittanning, Pa.

Location.- Water-stage recorder, lat. 40°49'15", long. 79°31'55", 600 feet upstream from dam 7 at Kittanning, Armstrong County, 5½ miles upstream from Crooked Creek, and 10 miles downstream from Mahoning Creek. Datum of gage is 771.32 feet above mean sea level (general adjustment of 1912). Oct. 1, 1934, to Apr. 19, 1939, staff gage at same site and datum.

Drainage area.- 8,973 square miles.

Records available.- August 1904 to September 1913, October 1918 to September 1921, October 1934 to September 1940 in reports of U. S. Geological Survey; August 1904 to September 1928, October 1934 to September 1940 in reports of Pennsylvania Department of Forests and Waters. Records prior to Sept. 30, 1928, obtained at highway bridge 4,000 feet downstream.

Average discharge.- 28 years (1905-21, 1922-28, 1934-40), 16,060 second-feet.

Discharge, in second-feet, water year October 1934 to September 1935.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,300	2,950	12,000	14,500	7,700	26,900	14,500	7,100	3,330	4,300	9,000	4,040
2	3,790	2,950	17,400	14,500	7,100	25,800	16,400	9,350	2,920	4,040	9,700	2,950
3	4,040	3,250	20,400	10,400	7,400	28,000	15,400	14,500	2,990	3,790	11,200	2,680
4	2,990	4,850	21,400	9,000	7,700	33,900	14,500	20,400	3,610	3,610	11,200	2,950
5	2,600	6,800	17,400	7,400	7,400	38,700	12,900	23,600	4,580	3,080	7,400	3,700
6	2,380	11,200	13,600	6,800	5,950	46,300	12,800	23,600	5,400	2,750	6,500	3,700
7	2,160	12,800	11,200	8,020	5,120	56,900	9,700	38,400	6,220	3,080	7,400	3,790
8	1,650	12,000	9,700	12,800	4,850	58,300	9,350	59,700	6,220	3,250	8,020	3,610
9	1,310	10,400	8,350	33,900	5,400	45,000	9,350	51,500	4,850	4,710	6,500	2,750
10	1,220	10,400	6,500	68,200	7,100	33,900	9,350	51,500	4,300	7,100	6,500	2,750
11	1,140	9,700	5,120	68,200	6,220	36,300	9,700	54,100	4,300	7,100	7,700	2,750
12	1,170	7,700	3,790	55,500	6,220	54,100	11,200	43,700	4,300	6,800	6,800	3,080
13	1,010	7,400	3,610	41,100	5,680	62,500	14,500	33,900	3,700	6,800	6,800	3,160
14	1,010	7,400	4,040	31,500	5,950	52,800	15,400	28,000	2,600	5,400	7,400	2,950
15	1,010	7,400	4,580	28,000	7,900	39,900	15,400	23,600	2,450	4,580	6,500	2,680
16	954	7,100	5,400	21,400	17,200	32,700	14,500	18,400	2,750	5,400	6,220	2,090
17	876	6,500	6,220	19,400	29,100	30,300	13,600	15,400	2,520	5,120	6,500	1,960
18	876	7,400	6,220	20,400	29,100	30,300	12,800	12,800	2,600	4,040	5,400	2,090
19	876	10,400	6,220	18,400	25,800	29,100	12,000	11,200	3,960	3,250	4,300	2,300
20	876	16,400	7,100	15,400	20,400	28,000	11,200	9,000	6,500	2,950	3,610	2,380
21	1,060	17,400	9,000	21,900	16,400	25,800	10,400	8,680	7,700	2,450	3,470	2,090
22	902	14,500	11,200	48,900	12,000	30,300	9,000	8,350	8,350	2,300	3,290	2,200
23	876	14,500	10,400	55,500	10,400	32,700	8,680	7,400	18,500	2,380	3,040	2,750
24	1,010	22,500	10,400	43,700	8,680	30,300	8,350	6,800	22,500	4,250	2,950	2,450
25	1,010	24,700	9,350	29,100	8,350	26,900	7,400	6,220	18,400	20,600	2,950	2,380
26	1,220	20,400	9,000	21,400	15,600	23,600	6,500	5,950	13,600	30,300	2,750	2,090
27	1,390	17,400	12,000	17,500	29,100	20,400	6,220	5,400	10,400	25,800	2,560	2,030
28	1,930	14,500	10,400	9,000	30,300	17,400	5,950	5,400	8,350	16,400	2,300	1,770
29	2,480	13,600	12,000	8,350		16,400	5,680	5,120	7,400	14,500	2,950	1,710
30	2,560	10,400	13,600	8,020		15,400	6,220	4,850	5,120	14,500	2,750	1,960
31	2,870		11,200	8,350		13,600		3,790		12,000	2,860	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	53,546	4,300	876	1,727	0.192	0.22
November	334,900	24,700	2,950	11,160	1.24	1.38
December	308,800	21,400	3,610	9,961	1.11	1.28
Calendar year						
January	776,540	68,200	6,800	25,050	2.79	3.22
February	350,120	30,300	4,850	12,500	1.39	1.45
March	1,042,500	62,500	13,600	33,630	3.75	4.32
April	328,850	16,400	5,680	10,960	1.22	1.36
May	617,710	59,700	3,790	19,930	2.22	2.56
June	200,420	22,500	2,450	6,681	.745	.83
July	236,630	30,300	2,300	7,633	.851	.98
August	176,520	11,200	2,300	5,694	.635	.73
September	79,790	4,040	1,710	2,660	.296	.33
Water year 1934-35	4,506,326	68,200	876	12,350	1.38	18.66

Note.- Discharge for period of backwater from flashboards, Oct. 1 to Jan. 9, and period of abnormal manipulations at lock, Aug. 20 to Sept. 3, computed on basis of gage heights, lockmaster's records, and records for stations upstream.

Allegheny River at Kittanning, Pa.
(Continued)

Extremes.- Maximum and minimum discharges for the water years 1935 to 1940 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (sec.-ft.)	Gage height (feet)	Date	Discharge (sec.-ft.)	Gage height (feet)
1934-35	Jan. 10	75,700	18.5	Oct. 17-20, 23	876	
1935-36	Mar. 18	179,000	26.0	July 19-23	746	11.16
1936-37	Jan. 25	164,000	24.7	Oct. 6-9	1,140	11.36
1937-38	Dec. 18	110,000	20.7	Oct. 1	620	11.16
1938-39	Feb. 21	91,500	19.5	Sept. 4	928	11.18
1939-40	Apr. 5	119,000	21.05	Aug. 15, 25	1,420	11.36

1904-28, 1934-40: Maximum discharge, 296,000 second-feet Mar. 26, 1913 (gage height, 30.7 feet, from flood mark, site and datum then in use); minimum observed, 570 second-feet Sept. 15-17, 1913.

Discharge, in second-feet, water year October 1935 to September 1936.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,200	2,950	8,680	5,680	5,680	50,200	65,300	16,400	3,790	2,090	1,420	2,680
2	2,950	3,610	7,700	5,950	5,400	39,900	58,300	15,400	3,610	2,450	1,420	2,560
3	3,080	3,790	7,400	8,020	5,120	33,900	52,800	16,400	3,610	3,080	1,280	2,090
4	2,750	3,250	6,500	12,800	5,120	30,300	45,000	20,400	3,250	3,160	1,140	1,860
5	2,560	2,830	4,850	14,500	4,850	38,700	36,300	18,400	3,160	2,450	1,280	1,710
6	2,450	2,750	4,040	15,400	4,580	43,700	36,300	14,500	3,160	1,770	1,650	1,560
7	2,560	3,380	4,580	15,400	4,850	39,900	48,900	12,800	2,750	1,710	2,440	1,280
8	2,380	3,700	6,220	14,500	5,120	35,100	47,600	11,200	2,450	1,560	2,950	1,060
9	2,380	4,300	11,600	15,400	5,120	35,100	41,100	9,700	2,450	1,500	2,380	954
10	2,090	4,850	26,600	22,500	4,580	52,800	37,500	9,000	3,250	1,280	1,860	876
11	2,030	4,300	31,500	21,400	4,040	65,300	35,100	7,700	4,040	1,280	1,470	876
12	2,030	4,300	25,800	19,400	3,700	107,000	32,700	7,400	4,580	1,280	1,420	1,010
13	1,960	7,040	22,500	17,400	3,610	109,000	30,300	7,400	4,580	1,220	1,280	1,010
14	2,030	10,400	21,400	19,400	3,700	81,800	32,700	7,400	4,580	1,060	1,140	876
15	1,850	11,200	21,400	18,400	4,040	68,200	30,300	6,800	4,040	1,010	1,140	876
16	1,700	11,200	30,300	18,400	4,040	66,700	26,900	6,800	3,250	1,010	1,140	876
17	1,520	10,400	37,500	16,400	4,040	113,000	24,700	6,800	2,830	876	1,140	876
18	1,420	8,020	31,500	15,400	4,040	171,000	21,400	6,220	2,380	876	1,140	876
19	1,560	7,400	25,800	13,600	4,040	104,000	18,400	6,500	2,680	798	1,280	1,010
20	1,700	6,220	20,400	9,700	3,790	69,700	16,400	8,680	2,680	746	1,420	876
21	1,600	6,220	16,400	9,000	3,610	63,900	16,400	9,700	2,680	746	1,650	876
22	1,500	5,950	12,000	8,020	3,610	56,900	17,400	9,000	2,300	746	1,710	876
23	1,500	5,680	8,020	7,700	3,610	48,900	21,400	8,020	2,030	746	1,960	876
24	1,710	5,680	8,680	5,680	3,510	56,900	20,400	6,500	2,030	1,090	1,770	876
25	1,860	4,850	8,680	4,850	5,060	85,000	17,400	5,950	2,030	1,830	1,710	876
26	2,300	4,580	6,800	5,120	23,800	107,000	14,500	5,680	1,770	2,030	1,960	876
27	2,450	4,580	5,680	5,400	49,300	110,000	12,000	5,400	1,710	2,090	2,300	876
28	2,090	4,300	5,400	5,680	72,700	125,000	12,000	5,120	1,710	2,680	1,770	876
29	1,860	5,400	4,300	5,950	58,300	110,000	11,200	5,120	1,710	2,450	1,960	1,090
30	2,030	7,700	4,040	6,220		88,200	14,500	5,400	1,710	1,960	2,560	1,470
31	2,200		4,850	5,950		74,200		4,300		1,650	2,830	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	64,300	3,080	1,420	2,074	0.231	0.27
November	170,830	11,200	2,750	5,694	.635	.71
December	441,120	37,500	4,040	14,230	1.59	1.83
Calendar year 1935	4,485,330	68,200	1,420	12,290	1.37	18.59
January	369,220	22,500	4,850	11,910	1.33	1.53
February	312,960	72,700	3,510	10,790	1.20	1.29
March	2,281,300	171,000	30,300	73,590	8.20	9.45
April	895,200	65,300	11,200	29,840	3.33	3.72
May	286,090	20,400	4,300	9,229	1.03	1.19
June	86,800	4,580	1,710	2,893	.322	.36
July	49,224	3,160	746	1,588	.177	.20
August	52,470	2,950	1,140	1,693	.189	.22
September	35,360	2,680	876	1,179	.131	.15
Water year 1935-36	5,044,874	171,000	746	13,780	1.54	20.92

Note.- Discharge for periods of abnormal conditions at dam, Oct. 15, 16, 20-23, July 8-23, Aug. 13-19, Sept. 6-30, computed on basis of gage heights and records for stations upstream.

Allegheny River at Kittanning, Pa.
(Continued)

Remarks.- Records good except those below 5,000 second-feet prior to Oct. 1, 1938, which are fair. Gage read three times daily Oct. 1, 1934, to Apr. 16, 1937, and eight times daily Apr. 17, 1937, to Apr. 19, 1939, except that readings were made hourly during high stages. Regulation at low stages owing to operation of hydroelectric plant on Clarion River.

Cooperation.- Gage-height record Oct. 1, 1934, to Apr. 19, 1939, and results of 17 discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1936 to September 1937.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,710	4,040	3,610	54,100	29,100	8,680	11,200	66,700	9,700	9,350	3,560	3,560
2	1,360	3,700	3,160	48,900	24,700	8,350	10,400	51,500	9,350	8,350	3,160	3,160
3	1,360	4,850	3,250	43,700	18,400	9,350	12,000	39,900	8,350	8,680	2,790	3,160
4	1,420	12,500	4,040	37,500	14,500	9,000	12,800	32,700	7,400	8,350	2,750	3,510
5	1,200	41,100	5,680	30,300	12,800	9,700	14,500	28,000	7,400	8,020	2,750	5,680
6	1,140	37,500	5,950	23,600	12,800	14,500	15,400	30,300	6,500	7,700	2,380	10,400
7	1,140	29,100	9,700	20,400	12,000	16,400	21,400	33,900	5,950	7,100	2,910	8,680
8	1,140	23,600	13,600	25,800	11,200	13,600	24,700	32,700	5,680	6,220	5,120	7,100
9	1,140	19,400	17,400	41,100	17,400	13,600	22,500	26,900	5,680	5,120	8,680	5,960
10	2,880	17,400	14,500	42,400	30,300	13,600	22,500	21,400	5,120	4,580	10,400	4,850
11	5,680	15,400	16,400	41,100	31,500	11,200	21,400	20,400	7,100	7,700	14,600	4,040
12	4,040	12,000	22,500	35,100	23,600	8,680	18,400	17,400	9,000	12,000	30,300	3,740
13	3,160	10,400	23,600	28,000	20,400	8,680	17,400	17,400	9,000	12,800	28,000	3,380
14	2,560	9,350	18,400	26,900	18,400	9,000	16,400	29,100	7,100	11,200	22,500	3,200
15	2,300	8,020	16,400	78,200	16,400	8,020	16,400	29,100	25,400	11,200	16,400	2,950
16	2,030	7,700	13,600	99,400	16,400	8,020	28,800	25,800	26,900	15,400	11,200	2,870
17	2,450	9,350	12,800	78,700	14,500	7,700	39,900	22,500	20,400	35,100	9,000	2,480
18	4,580	9,350	12,000	74,200	12,800	6,800	33,900	20,400	17,400	24,700	7,700	2,560
19	5,120	9,700	10,400	81,800	12,000	7,700	26,900	21,400	31,000	15,400	7,400	2,410
20	4,300	9,350	11,200	65,300	11,200	8,020	24,700	21,400	43,700	12,000	6,800	2,030
21	3,790	9,000	14,500	75,700	11,200	15,000	22,500	18,400	36,300	9,000	7,100	1,960
22	3,510	7,700	14,500	121,000	14,500	20,400	31,500	16,400	50,200	8,020	8,350	2,030
23	3,160	7,400	13,600	109,000	20,400	19,400	45,000	14,500	65,300	6,500	9,000	2,030
24	2,950	8,020	12,800	80,200	20,400	17,400	45,000	12,800	51,500	6,220	9,350	1,860
25	2,750	7,700	12,800	140,000	17,400	19,400	39,900	14,500	36,300	5,680	8,020	1,710
26	2,750	7,100	13,600	141,000	14,500	25,800	97,500	12,000	26,900	4,850	8,020	1,710
27	4,300	6,220	22,500	96,200	12,000	24,700	125,000	12,000	19,400	5,950	7,100	1,710
28	5,950	5,950	39,900	69,700	11,200	19,400	104,000	17,400	13,600	5,400	6,800	1,420
29	5,680	5,120	47,600	52,800		15,400	104,000	19,400	12,800	4,850	5,680	1,530
30	4,850	4,040	43,700	39,900		13,600	89,800	17,400	11,200	4,300	4,580	1,590
31	4,040		47,600	33,900		12,800		12,000		3,650	3,790	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	94,440	5,950	1,140	3,046	0.339	0.39
November	362,060	41,100	3,700	12,070	1.35	1.51
December	521,290	47,600	3,160	16,820	1.87	2.16
Calendar year 1936	5,346,414	171,000	746	14,610	1.63	22.17
January	1,935,900	141,000	20,400	62,450	6.96	8.02
February	482,000	31,500	11,200	17,210	1.92	2.00
March	403,900	25,800	6,800	13,030	1.45	1.67
April	1,115,800	125,000	10,400	37,190	4.14	4.62
May	755,700	66,700	12,000	24,380	2.72	3.14
June	591,630	65,300	5,120	19,720	2.20	2.45
July	295,390	35,100	3,650	9,529	1.06	1.22
August	276,190	30,300	2,380	8,909	.993	1.14
September	103,260	10,400	1,420	3,442	.384	.43
Water year 1936-37	6,937,560	141,000	1,140	19,000	2.12	28.75

Note.- Discharge for periods of abnormal conditions at dam, Oct. 1-9, Sept. 12-30, computed on basis of gage heights and records for stations upstream.

Allegheny River at Kittanning, Pa.

(Continued)

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,360	18,400	20,400	20,000	22,500	16,400	19,400	10,400	7,700	12,800	6,220	1,400
2	1,310	15,400	16,400	38,700	22,500	14,500	19,400	9,350	6,800	13,600	6,800	1,380
3	1,560	12,800	12,000	42,400	20,400	16,400	18,400	9,350	6,800	12,000	6,800	1,340
4	1,560	10,400	10,400	35,100	22,500	17,400	14,500	8,680	6,220	8,680	7,100	1,300
5	1,560	9,350	9,700	26,900	25,800	16,400	13,600	9,700	5,680	7,100	5,950	1,250
6	1,800	9,000	9,000	20,400	28,000	58,600	12,800	11,200	5,400	6,500	5,950	1,360
7	1,860	8,020	9,000	17,400	46,600	81,800	14,500	10,400	5,120	5,400	8,020	1,140
8	1,860	7,100	8,350	15,400	58,300	65,300	17,400	8,020	5,120	5,400	11,200	1,150
9	2,000	7,700	5,030	12,000	47,600	48,900	38,700	7,100	5,120	4,850	9,350	1,150
10	2,230	8,020	3,790	8,680	65,300	37,500	55,500	6,500	4,580	6,220	7,400	1,200
11	1,930	8,020	4,300	7,400	65,300	30,300	50,200	5,950	4,850	5,400	6,220	1,300
12	1,860	7,700	4,300	8,020	52,800	24,700	51,500	6,500	5,680	6,500	5,950	1,470
13	1,860	8,680	4,300	8,680	42,400	20,400	55,500	6,500	6,500	5,680	7,100	2,030
14	1,860	12,800	4,580	8,350	65,300	28,100	52,800	7,100	7,100	5,400	8,020	2,030
15	1,860	15,400	4,580	7,700	75,700	43,700	46,300	6,220	6,220	5,950	6,220	2,300
16	2,030	18,400	5,950	7,100	63,900	36,300	38,700	6,500	5,680	5,950	5,120	11,700
17	2,000	18,400	18,600	6,800	48,900	37,500	31,500	6,500	5,400	5,400	4,300	21,400
18	1,860	19,400	82,100	6,500	37,500	47,600	28,000	6,220	5,120	4,300	4,040	18,400
19	2,790	18,400	99,400	5,680	43,700	42,400	32,700	6,800	4,300	4,300	4,040	12,000
20	7,600	17,400	69,700	4,580	68,200	36,300	35,100	8,680	3,610	3,790	3,790	9,700
21	11,200	14,500	51,500	4,040	63,900	29,100	30,300	9,350	3,160	3,610	2,910	8,680
22	9,700	12,000	41,100	5,760	48,900	25,800	26,900	12,000	3,160	3,610	2,750	7,700
23	10,400	11,200	35,100	6,220	41,100	22,500	23,600	12,800	3,160	3,610	2,750	7,400
24	14,500	10,400	30,300	7,100	35,100	20,400	21,400	14,500	3,160	4,300	2,450	12,400
25	17,400	9,350	24,700	17,300	29,100	22,500	18,400	16,400	3,250	6,220	2,380	16,400
26	16,400	9,000	21,400	36,300	25,800	23,600	16,400	15,400	3,610	8,680	2,380	15,400
27	14,500	11,200	20,400	28,000	21,400	22,500	13,600	13,600	14,100	8,020	2,030	11,200
28	17,400	14,500	18,400	22,500	17,400	19,400	12,800	12,800	31,500	6,800	1,740	9,700
29	28,000	18,400	16,400	17,400		17,400	12,000	10,400	22,500	6,220	1,600	7,700
30	26,900	21,400	14,500	15,400		16,400	11,200	8,680	16,400	9,350	1,550	6,220
31	23,600		13,600	18,400		16,400		8,020		8,680	1,450	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	232,750	28,000	1,310	7,508	0.837	0.96
November	382,740	21,400	7,100	12,760	1.42	1.58
December	689,280	99,400	3,790	22,230	2.48	2.86
Calendar year 1937	7,264,540	141,000	1,310	19,900	2.22	30.09
January	486,210	42,400	4,040	15,680	1.75	2.02
February	1,205,900	75,700	17,400	43,070	4.80	5.00
March	956,500	81,800	14,500	30,850	3.44	3.97
April	833,100	55,500	11,200	27,770	3.09	3.45
May	291,620	16,400	5,950	9,407	1.05	1.21
June	217,000	31,500	3,160	7,233	.806	.90
July	204,320	13,600	3,610	6,591	.735	.85
August	153,580	11,200	1,450	4,954	.552	.64
September	197,800	21,400	1,140	6,593	.735	.82
Water year 1937-38	5,850,800	99,400	1,140	16,030	1.79	24.26

Note.- Discharge for periods of abnormal conditions at dam, Oct. 1-18, Aug. 29 to Sept. 5, Sept. 8-11, computed on basis of gage heights and records for stations upstream.

Allegheny River at Kittanning, Pa.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,120	3,160	7,700	3,790	31,500	56,700	52,800	9,700	4,040	2,600	6,680	1,060
2	4,580	2,750	8,350	5,120	24,700	54,100	48,900	10,000	3,790	3,330	6,220	1,060
3	4,300	2,750	8,020	5,120	36,300	46,300	45,000	9,210	3,470	3,080	5,290	980
4	3,610	2,750	9,350	6,500	35,100	37,500	36,300	7,960	3,420	2,600	4,040	1,010
5	3,160	2,750	20,800	10,300	24,700	33,900	30,300	7,160	3,700	2,340	5,140	1,170
6	2,750	2,750	28,000	24,800	20,400	36,300	25,800	6,860	3,790	2,230	4,620	1,360
7	2,950	2,750	24,700	41,100	21,400	38,700	29,100	6,000	3,510	2,160	3,200	1,360
8	3,160	2,750	21,400	38,700	21,400	36,300	28,000	5,820	3,200	2,270	2,680	1,310
9	3,160	2,750	18,400	30,300	20,400	31,500	24,700	5,730	3,330	2,640	2,380	1,360
10	3,420	2,750	16,400	23,600	24,700	29,100	20,400	6,060	3,040	2,720	2,230	1,530
11	3,610	2,750	15,400	21,400	43,700	26,900	21,400	6,680	2,790	2,750	2,160	1,470
12	3,510	3,080	15,400	22,500	41,100	30,300	25,800	6,560	2,950	2,340	2,090	1,450
13	2,990	3,160	14,500	19,400	32,700	56,700	29,700	6,000	3,160	2,030	2,000	1,450
14	2,750	3,250	12,800	16,400	28,000	52,800	26,900	4,850	3,290	2,090	1,930	1,450
15	2,600	4,300	9,700	12,000	34,000	43,700	29,100	4,520	3,120	2,910	1,770	1,390
16	2,750	6,500	8,680	9,700	51,500	41,100	50,200	4,740	2,950	3,040	1,770	1,360
17	2,750	6,800	8,020	9,700	42,400	38,700	47,600	4,520	2,950	2,790	1,710	1,280
18	2,750	6,220	7,100	9,700	35,100	33,900	41,100	4,300	2,830	2,640	1,470	1,200
19	2,750	7,820	7,100	9,700	30,300	25,800	35,100	4,100	3,120	2,270	1,470	1,200
20	2,720	22,200	7,100	8,020	45,200	21,400	32,700	3,990	3,120	1,930	1,470	1,200
21	2,380	31,500	6,800	7,700	85,000	19,400	30,300	3,650	2,950	1,680	1,470	1,140
22	2,380	24,700	6,800	7,400	81,700	17,400	26,400	5,220	3,320	1,530	1,470	1,090
23	2,380	18,400	5,950	7,400	62,300	15,400	22,000	7,900	4,250	1,390	1,470	1,060
24	2,380	13,600	5,400	6,800	47,600	14,500	17,900	7,960	3,420	1,360	1,450	1,030
25	2,520	12,000	5,400	6,220	36,300	14,500	16,400	6,440	4,460	1,310	1,330	1,030
26	2,520	9,700	5,400	4,300	32,700	18,400	15,000	5,900	3,700	1,250	1,250	1,060
27	2,750	8,350	5,400	3,080	33,900	26,900	13,600	5,560	2,990	1,310	1,200	1,090
28	2,750	7,520	4,580	3,250	40,000	39,900	12,400	4,300	2,950	1,250	1,170	1,360
29	2,750	6,500	3,250	4,580		42,400	11,600	3,790	2,600	1,530	1,140	1,930
30	2,950	6,060	3,160	12,600		37,500	10,800	4,150	2,480	2,010	1,140	2,300
31	3,160		3,160	45,300		51,500		3,940		4,840	1,060	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	94,310	5,120	2,380	3,042	0.339	0.39
November	232,320	31,500	2,750	7,744	.863	.96
December	324,220	28,000	3,160	10,460	1.17	1.35
Calendar year 1938	5,196,880	81,800	1,140	14,240	1.59	21.56
January	436,480	45,300	3,080	14,080	1.57	1.81
February	1,064,100	85,000	20,400	38,000	4.23	4.40
March	1,069,500	56,700	14,500	34,500	3.84	4.43
April	857,300	52,800	10,800	28,580	3.19	3.56
May	183,370	10,000	3,650	5,915	.659	.76
June	98,690	4,460	2,480	3,290	.367	.41
July	70,220	4,840	1,250	2,265	.252	.29
August	74,470	6,680	1,060	2,402	.268	.31
September	38,740	2,300	980	1,291	.144	.16
Water year 1938-39	4,543,720	85,000	980	12,450	1.39	18.83

Allegheny River at Kittanning, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,790	11,000	3,250	4,580	5,180	8,480	116,000	15,000	27,400	21,400	2,600	3,510
2	2,640	8,540	3,330	3,700	5,180	8,350	104,000	15,900	25,800	16,900	2,340	4,040
3	2,990	7,580	3,380	3,250	5,180	9,420	91,500	17,400	22,500	13,600	1,960	3,990
4	2,910	6,980	4,480	3,080	4,900	17,000	104,000	17,400	19,400	11,200	1,740	3,470
5	2,680	5,840	19,900	3,470	4,100	25,800	113,000	15,900	15,000	8,280	1,650	2,790
6	2,200	6,000	19,900	3,990	4,580	26,900	103,000	14,500	12,400	7,700	1,770	2,520
7	1,860	6,060	15,400	4,580	5,120	25,200	85,900	13,600	10,000	7,220	2,000	2,270
8	1,680	5,680	12,800	4,300	5,680	22,500	71,300	12,400	9,070	6,060	1,860	2,090
9	1,800	6,390	11,200	4,250	6,220	18,900	87,800	11,600	10,000	5,680	2,060	2,370
10	4,160	8,830	10,000	4,520	7,960	16,900	87,800	11,600	9,700	5,120	2,030	4,520
11	5,840	11,200	10,000	4,300	12,800	13,600	69,600	11,200	9,140	5,680	1,770	5,800
12	5,900	9,700	16,200	5,070	19,900	12,400	66,300	9,420	12,700	7,580	1,650	3,890
13	5,460	9,000	18,400	5,340	30,300	10,800	73,000	7,960	23,000	7,460	1,560	3,290
14	4,850	8,940	16,900	5,240	31,500	10,800	61,600	8,680	18,400	6,170	1,560	3,120
15	3,790	7,960	17,400	10,900	27,400	12,000	51,500	8,870	14,500	4,580	1,530	2,560
16	3,200	7,280	15,900	16,400	22,000	12,000	43,700	8,870	12,400	4,630	1,560	2,480
17	3,080	7,160	13,200	15,400	17,400	10,400	38,700	9,420	10,000	5,730	1,500	2,790
18	2,790	7,220	11,600	13,600	16,900	10,800	42,400	9,210	9,210	4,850	1,500	2,640
19	2,450	6,280	12,400	10,800	14,500	34,000	57,100	8,350	13,600	4,300	1,650	2,680
20	2,270	5,780	14,400	8,420	15,900	47,600	76,600	8,160	14,500	3,890	1,830	2,790
21	2,200	5,900	31,600	7,830	15,900	47,600	91,500	12,000	13,200	3,290	2,000	2,600
22	2,130	5,460	33,900	6,620	15,000	41,100	80,200	13,200	10,800	2,830	1,740	2,230
23	2,030	5,290	27,400	6,280	13,200	33,900	63,100	12,800	8,800	2,830	1,710	2,060
24	1,960	4,410	19,900	6,280	12,400	22,500	48,900	16,900	7,580	2,870	1,590	2,000
25	2,200	4,460	15,000	7,220	12,400	18,400	38,700	29,100	7,640	2,830	1,500	2,680
26	2,450	3,890	13,200	6,920	9,490	15,000	32,700	29,100	16,800	2,870	1,560	4,070
27	3,130	3,470	12,200	6,340	8,540	16,400	26,400	29,100	15,900	3,290	1,960	5,990
28	14,000	3,650	9,700	5,680	7,960	18,400	22,000	32,700	12,800	3,560	2,270	7,640
29	17,900	3,420	9,420	5,180	8,350	24,200	18,900	25,800	12,800	3,420	2,230	5,780
30	20,400	3,290	8,090	4,850		54,500	16,900	19,900	17,900	3,470	2,300	4,410
31	15,300		7,300	5,180		104,000		23,600		3,330	2,950	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	149,040	20,400	1,680	4,808	0.536	0.62
November	196,660	11,200	3,290	6,555	.731	.82
December	437,750	33,900	3,250	14,120	1.57	1.81
Calendar year 1939	4,676,320	85,000	980	12,810	1.43	19.38
January	203,570	16,400	3,080	6,567	.732	.84
February	365,940	31,500	4,100	12,620	1.41	1.52
March	749,850	104,000	8,350	24,190	2.70	3.11
April	1,984,100	116,000	16,900	66,140	7.37	8.22
May	479,640	32,700	7,960	15,470	1.72	1.98
June	422,940	27,400	7,580	14,100	1.57	1.75
July	192,620	21,400	2,830	6,214	.693	.80
August	57,930	2,950	1,500	1,869	.208	.24
September	103,070	7,640	2,000	3,436	.383	.43
Water year 1939-40	5,343,110	116,000	1,500	14,600	1.63	22.14

Allegheny River at Natrona, Pa.

Location.- Water-stage recorder, lat. 40°36'55" (revised), long. 79°43'10", at Natrona, Allegheny County, 550 feet upstream from dam 4, 6 miles downstream from Kiskiminetas River, and 24.2 miles upstream from confluence with Monongahela River at Pittsburgh. Datum of gage is 736.74 feet above mean sea level (general adjustment of 1912; Corps of Engineers, U. S. Army, bench mark). Prior to April 14, 1940, staff gage at same site and datum.
Drainage area.- 11,410 square miles.
Records available.- October 1938 to September 1940.
Extremes.- Maximum discharge during year, 187,000 second-feet Mar. 31 (gage height, 23.6 feet, observed at peak); minimum, 1,410 second-feet Aug. 23 (gage height, 9.05 feet); minimum daily, 1,690 second-feet Aug. 25.
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum discharge observed, 1,270 second-feet Sept. 27, 28, 1939 (gage height, 8.9 feet).
Maximum stage known, 32.06 feet Mar. 18, 1936 (discharge, 365,000 second-feet, determined by Corps of Engineers, U. S. Army).
Remarks.- Records good except those below 5,000 second-feet, which are fair. Prior to April 14, staff gage read four times daily during medium and low stages, and hourly during high stages. Slight regulation at low stages from power plants, navigation manipulations, and storage reservoirs upstream.
Cooperation.- Gage-height records prior to April 14 and results of two discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,840	12,800	3,720	6,460	5,540	11,200	165,000	18,600	38,200	26,400	3,950	5,040
2	3,040	10,000	3,480	3,950	5,540	12,000	133,000	18,600	35,700	24,200	3,130	5,090
3	3,480	8,900	3,950	3,480	5,540	16,800	110,000	20,100	30,400	19,100	2,840	5,040
4	3,480	7,460	3,950	3,480	5,540	35,700	135,000	20,100	25,900	15,800	2,330	4,500
5	3,480	6,780	17,000	3,480	4,450	40,700	143,000	19,100	20,600	11,800	2,180	3,720
6	2,840	6,780	22,200	4,200	4,720	36,900	125,000	16,800	16,300	10,300	2,250	3,170
7	2,550	6,780	17,200	4,450	5,540	33,300	100,000	16,300	13,600	9,500	3,170	2,880
8	2,250	6,460	14,500	5,260	7,120	28,700	82,500	15,000	12,000	7,960	2,750	2,750
9	1,890	7,120	12,800	4,980	8,170	24,200	109,000	14,100	13,200	7,320	2,630	3,040
10	3,480	9,650	10,800	4,980	10,400	21,100	108,000	13,600	14,500	6,720	2,630	4,900
11	6,140	12,800	11,200	4,980	20,100	17,200	84,200	13,200	14,100	6,920	2,330	7,050
12	6,140	11,200	15,400	5,540	29,800	15,400	79,100	11,700	18,000	9,500	2,110	5,380
13	5,540	10,400	20,100	5,540	39,400	14,500	85,800	10,100	27,600	10,400	1,960	4,300
14	4,980	10,400	18,200	6,140	38,200	14,500	74,000	10,600	22,200	8,240	1,930	3,860
15	4,450	9,650	18,200	13,000	33,300	16,300	60,900	11,000	18,200	6,270	1,930	3,440
16	3,720	8,170	18,200	21,100	27,600	16,300	50,400	10,900	15,400	5,900	2,710	3,000
17	3,040	8,170	15,400	19,100	22,200	14,500	46,100	11,400	13,200	6,980	2,140	3,220
18	3,040	8,170	12,800	16,300	20,100	15,400	51,800	11,500	11,600	6,460	1,820	3,130
19	2,710	7,120	13,600	13,600	18,200	49,600	74,000	10,300	15,400	5,660	2,110	3,080
20	2,630	6,140	15,400	10,400	20,100	68,900	121,000	10,500	19,600	4,980	2,140	3,170
21	2,630	6,140	30,500	9,280	21,100	60,900	132,000	17,200	17,200	4,300	2,440	3,080
22	2,630	6,140	36,900	7,820	20,100	51,800	112,000	17,700	14,100	3,720	2,250	2,840
23	2,440	5,540	31,000	6,780	17,200	42,000	82,500	16,300	11,700	3,620	1,820	2,440
24	2,250	5,260	22,200	7,460	16,300	29,800	60,900	19,100	9,950	4,200	1,890	2,360
25	2,250	4,450	17,200	7,820	16,300	23,200	47,500	30,500	9,580	4,150	1,690	3,170
26	2,840	4,450	15,400	7,460	12,800	20,100	38,200	33,300	16,800	4,350	2,000	4,470
27	3,480	3,950	14,500	7,120	11,200	20,100	32,200	36,800	18,600	4,720	2,480	6,040
28	13,600	3,950	11,200	6,140	10,400	23,200	27,000	40,700	15,800	4,770	3,480	8,610
29	20,100	3,950	11,200	5,540	11,200	34,500	22,700	31,600	17,700	5,420	3,530	6,850
30	22,200	3,950	9,650	4,980		71,800	20,600	25,400	23,700	5,200	3,480	5,150
31	18,200		8,900	5,540		168,000		34,100		4,720	4,100	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	164,340	22,200	1,890	5,301	0.465	0.54
November	222,730	12,800	3,950	7,424	.651	.73
December	476,750	36,900	3,480	15,380	1.35	1.56
Calendar year 1939	5,730,590	90,600	1,270	15,700	1.38	18.68
January	236,360	21,100	3,480	7,625	.668	.77
February	468,160	39,400	4,450	16,140	1.41	1.52
March	1,048,600	168,000	11,200	33,830	2.96	3.41
April	2,513,400	165,000	20,600	83,780	7.34	8.19
May	586,200	40,700	10,100	18,910	1.66	1.91
June	550,830	38,200	9,580	18,360	1.61	1.80
July	259,580	26,400	3,620	8,374	.734	.85
August	78,200	4,100	1,690	2,523	.221	.25
September	124,770	8,610	2,360	4,159	.365	.41
Water year 1939-40	6,729,920	168,000	1,690	18,390	1.61	21.94

Ohio River at Sewickley, Pa.

Location.- Water-stage recorder, lat. 40°31'50", long. 80°11'20", 200 feet upstream from highway bridge at Sewickley, Allegheny County, 0.5 mile upstream from Narrows Run, 1.5 miles upstream from Dashield Dam, and 11.8 miles downstream from confluence of Allegheny and Monongahela Rivers. Datum of gage is 690.00 feet above mean sea level (general adjustment of 1912).

Drainage area.- 19,500 square miles.

Records available.- October 1933 to September 1940.

Extremes.- Maximum discharge during year, 262,000 second-feet Apr. 21 (gage height, 18.73 feet); minimum, 2,450 second-feet Aug. 12 (gage height, 2.60 feet); minimum daily, 3,340 second-feet Aug. 18.

1933-40: Maximum discharge, 574,000 second-feet Mar. 18, 1936 (gage height, 34.75 feet, from floodmark in gage house); minimum, about 2,000 second-feet July 25, 1934; minimum daily, 2,150 second-feet July 25, 1934.

Remarks.- Records good. Flow partly regulated at low stages by locks and reservoirs upstream.

Cooperation.- Results of three discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,620	17,700	5,520	9,540	7,900	31,600	243,000	29,000	120,000	47,500	7,630	14,300
2	5,100	13,500	6,200	6,440	7,810	33,400	187,000	29,000	82,100	76,600	6,520	12,800
3	4,680	12,800	5,820	5,900	8,400	52,200	140,000	29,800	63,600	48,900	6,200	11,800
4	5,820	12,100	5,900	5,450	7,900	92,000	168,000	28,100	51,000	38,000	5,030	9,780
5	5,820	10,000	16,100	5,520	6,840	107,000	190,000	27,200	40,000	26,400	3,770	8,200
6	5,450	8,800	24,800	6,280	7,810	89,800	150,000	23,200	30,700	25,600	4,300	6,920
7	4,890	8,900	21,000	6,680	11,100	70,400	122,000	23,200	26,400	21,200	5,980	6,680
8	4,230	9,230	18,200	7,090	22,800	58,400	98,600	22,400	22,400	16,200	5,310	8,320
9	3,620	10,000	16,900	6,440	30,700	46,900	122,000	21,600	21,200	15,200	4,820	10,800
10	4,020	13,100	17,300	6,360	29,800	37,100	136,000	19,900	24,800	14,300	4,750	11,400
11	7,000	17,300	15,300	7,000	55,200	29,000	111,000	19,500	28,100	12,700	4,750	13,500
12	7,450	14,200	18,000	7,900	87,600	24,000	103,000	16,400	30,100	15,800	3,370	11,300
13	7,000	13,100	24,800	9,450	78,800	23,200	111,000	14,300	47,500	16,800	3,360	8,900
14	6,280	13,100	24,000	9,340	78,800	24,800	98,600	15,600	42,900	13,800	3,560	8,100
15	5,900	11,700	24,800	21,100	76,600	29,000	81,000	16,100	35,200	10,900	3,980	7,000
16	4,960	10,800	24,800	43,900	61,500	30,700	81,000	17,100	29,800	10,600	3,740	5,520
17	4,490	10,000	19,500	35,200	48,900	27,200	101,000	18,000	25,600	10,900	4,300	5,980
18	5,170	10,300	17,100	29,000	45,900	29,000	122,000	18,000	21,400	10,900	3,340	5,980
19	4,620	9,230	19,900	21,200	40,000	72,900	134,000	14,400	34,400	9,230	4,730	6,050
20	4,360	8,200	23,200	14,900	56,200	109,000	228,000	14,000	55,200	9,340	3,740	5,380
21	3,980	8,500	37,400	13,100	61,500	98,600	249,000	29,800	45,900	7,900	4,100	5,450
22	4,040	8,500	52,000	11,800	51,000	83,200	198,000	34,300	34,800	6,680	4,360	5,310
23	3,800	8,100	44,900	11,800	40,000	67,800	136,000	29,800	24,400	6,830	3,800	4,360
24	3,920	7,630	35,200	12,800	32,500	45,900	105,000	30,700	19,200	8,150	3,440	4,420
25	4,440	6,840	24,800	12,800	28,100	34,300	85,400	44,400	17,800	12,900	3,500	6,840
26	5,580	6,840	20,100	12,400	24,000	29,800	67,800	63,600	24,400	14,700	f3,860	15,300
27	6,960	6,520	18,800	11,300	21,200	29,000	56,200	67,800	29,000	14,000	f8,170	25,600
28	14,900	5,680	16,800	9,450	21,400	33,400	44,900	72,200	26,500	11,600	f25,300	21,400
29	31,600	6,520	15,300	7,900	25,600	45,900	34,300	56,200	29,800	10,600	26,400	16,500
30	32,500	6,120	15,100	7,450		82,000	31,600	44,900	35,200	8,800	19,600	10,400
31	25,600		11,900	7,630		213,000		91,500		8,750	15,100	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	242,800	32,500	3,620	7,832	0.402	0.46
November	305,310	17,700	5,680	10,180	.522	.58
December	641,440	52,000	5,520	20,690	1.06	1.22
Calendar year 1939	10,079,130	207,000	2,550	27,610	1.42	19.21
January	383,120	43,900	5,450	12,360	.634	.73
February	1,075,860	87,600	6,840	37,000	1.90	2.05
March	1,780,500	213,000	23,200	57,440	2.95	3.40
April	3,735,400	249,000	31,600	124,500	6.38	7.12
May	982,000	91,500	14,000	31,680	1.62	1.87
June	1,119,400	120,000	17,800	37,310	1.91	2.13
July	561,780	76,600	6,680	18,120	.929	1.07
August	210,810	26,400	3,340	6,800	.349	.40
September	294,290	25,600	4,360	9,810	.503	.56
Water year 1939-40	11,332,710	249,000	3,340	30,960	1.59	21.59

f Discharge computed on basis of gage heights at Dashields Dam.
Note.- Discharge for Mar. 30 to Apr. 2, Apr. 4, 20, 21, corrected for changing stage by "Lewis Method."

Conewango Creek at Russell, Pa.

Location.- Chain gage, lat. 41°56'20", long. 79°07'55", at highway bridge in Russell Warren County, 0.4 mile upstream from Ackley Run and 8.0 miles upstream from mouth. Datum of gage is 1,222.18 feet above mean sea level (unadjusted).

Drainage area.- 816 square miles.

Records available.- November 1939 to September 1940.

Extremes.- Maximum discharge during period, 10,700 second-feet Apr. 4 (gage height, 9.44 feet, observed at peak); minimum discharge observed, 159 second-feet Aug. 11, 18 (gage height, 2.18 feet).

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily. Flow regulated by storage in Chautauqua Lake. Some diurnal fluctuation caused by operation of mills upstream.

Cooperation.- Records of storage in Chautauqua Lake furnished by city of Jamestown.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			470	900	640	900	7,980	1,480	1,190	1,240	189	290
2			502	860	630	890	9,080	1,680	1,480	1,060	183	310
3			1,830	830	630	960	9,300	1,790	1,380	920	177	335
4			3,380	820	630	2,040	10,700	1,790	1,100	795	174	270
5			3,240	810	*630	2,850	10,700	1,680	965	680	168	246
6			3,240	800	630	2,610	10,200	1,580	878	605	206	216
7			2,610	*800	640	2,370	9,080	1,480	835	570	254	198
8			1,900	780	760	1,900	7,980	1,330	680	535	216	763
9			1,680	760	690	1,790	7,980	1,280	642	642	189	1,240
10		1,010	1,480	740	910	1,580	7,540	1,240	605	878	177	680
11		1,010	2,250	720	1,800	1,380	6,660	1,100	4,030	570	162	535
12		965	2,130	700	2,730	1,280	6,880	920	5,090	440	165	440
13		878	2,010	700	3,380	1,240	6,450	920	5,460	335	165	470
14		795	2,370	760	2,850	1,190	6,240	878	5,270	310	246	605
15		755	2,130	1,800	2,250	1,140	5,650	795	4,740	290	216	642
16		835	1,790	1,650	2,000	1,100	5,270	795	3,660	335	195	718
17		878	1,680	1,500	1,750	1,100	4,410	835	1,900	385	171	680
18		878	1,790	1,350	1,580	1,150	4,250	795	1,360	385	159	605
19		755	1,670	1,200	1,580	3,220	4,100	795	2,610	310	242	535
20		680	3,630	1,040	1,580	3,660	4,410	835	2,980	290	266	502
21		605	3,660	960	1,580	3,240	5,270	795	2,610	262	226	502
22		570	3,380	900	1,420	2,730	5,090	642	1,680	242	198	502
23		535	2,490	840	1,320	2,250	4,910	518	1,280	250	180	502
24		535	1,900	810	1,250	1,680	4,570	1,600	1,280	270	168	502
25		535	1,580	780	1,150	1,580	3,800	2,130	2,800	266	168	1,350
26		502	1,480	750	1,080	1,480	2,850	1,900	3,110	266	171	1,480
27		470	1,260	730	1,000	1,380	2,250	1,900	2,610	246	206	1,140
28		470	1,130	700	970	1,280	2,010	1,900	1,900	216	360	795
29		470	1,020	680	940	2,420	1,790	1,790	1,580	202	440	718
30		470	980	670		5,100	1,580	1,480	1,380	202	360	605
31			920	650		6,240		1,240		195	258	

Month	Observed: Second-foot-days	Observed: Maximum	Observed: Minimum	Observed: Mean	Change in contents** (mean second-feet)	Adjusted for change in reservoir contents: Mean	Adjusted for change in reservoir contents: Per square mile	Adjusted for change in reservoir contents: Run-off in inches
October								
November 10-31	14,601	1,010	470	695				
December	61,582	3,660	470	1,987	+113	2,100	2.57	2.96
Calendar year								
January	27,990	1,800	650	903	-115	788	.966	1.11
February	39,000	3,380	630	1,345	+27.9	1,373	1.68	1.81
March	63,730	6,240	890	2,056	+276	2,332	2.86	3.30
April	178,980	10,700	1,580	5,966	+20.2	5,986	7.34	8.19
May	39,893	2,130	518	1,287	-78.3	1,209	1.48	1.71
June	67,085	5,460	605	2,236	-76.4	2,160	2.65	2.96
July	14,192	1,240	195	458	-76.2	382	.468	.54
August	6,655	440	159	215	-37.0	178	.218	.25
September	18,376	1,480	198	613	-67.4	546	.669	.75
Water year								

*Winter discharge measurement made on this day.
**Change in contents in Chautauqua Lake.
Note.- Stage-discharge relation affected by ice Dec. 27 to Feb. 11, Feb. 16, 17, Feb. 22 to Mar. 3.

Brokenstraw Creek at Youngsville, Pa.

Location.- Water-stage recorder, lat. 41°51'10", long. 79°19'05", 150 feet downstream from highway bridge at Youngsville, Warren County, 500 feet upstream from Mathews Run and 3.7 miles upstream from mouth. Datum of gage is 1,187.92 feet above mean sea level (general adjustment of 1907).

Drainage area.- 321 square miles, including area of Mathews Run.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1909 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 26 years (1910-15, 1919-40), 544 second-feet.

Extremes.- Maximum discharge during year, 8,390 second-feet Apr. 1 (gage height, 8.55 feet); minimum, 52 second-feet Aug. 4.

1909-40: Maximum discharge observed, 14,300 second-feet Mar. 25, 1913 (gage height, 13.2 feet, present datum), from rating curve extended above 7,000 second-feet; minimum observed, 19 second-feet Oct. 14, 1934.

Remarks.- Records good except those for periods of ice effect, which are fair. Records include discharge of Mathews Run.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	285	143	190	175	270	6,800	386	855	580	65	132
2	137	252	169	185	170	274	4,750	565	1,050	430	62	135
3	98	281	827	185	170	368	4,700	587	765	322	60	118
4	77	259	1,510	190	165	970	7,030	565	549	263	60	98
5	69	225	1,300	190	165	1,160	5,480	507	441	222	57	81
6	59	209	771	195	*160	1,020	3,140	431	371	190	91	73
7	57	199	517	*195	220	855	2,210	380	324	174	132	65
8	88	306	538	190	280	718	2,520	345	296	162	92	73
9	461	522	522	190	312	609	3,540	371	289	156	75	131
10	329	417	471	185	403	470	2,940	337	294	159	68	106
11	532	436	1,200	180	1,400	*370	1,690	300	1,560	159	65	98
12	398	417	1,160	180	1,510	340	3,020	274	c2,320	162	62	92
13	248	341	908	193	1,770	360	2,640	274	c1,110	141	62	92
14	190	312	1,020	299	1,420	340	1,970	266	c450	129	84	103
15	175	308	795	1,190	982	330	1,360	259	c308	126	89	106
16	157	296	614	918	801	320	1,700	358	c238	177	89	126
17	137	285	642	789	689	320	1,620	363	c190	162	78	118
18	123	252	700	650	581	540	2,380	333	c254	135	70	100
19	112	231	686	550	528	2,050	2,250	320	c819	123	135	86
20	112	212	2,040	470	631	1,810	2,560	345	c561	118	115	78
21	120	190	1,700	395	576	1,510	3,090	316	c346	109	92	78
22	120	184	1,060	325	476	1,240	2,260	285	c242	103	78	84
23	140	178	683	290	410	801	1,440	308	c199	100	65	89
24	149	169	592	265	360	631	1,020	1,070	c299	100	65	84
25	140	160	481	245	330	528	819	1,050	c486	89	60	200
26	199	149	451	230	300	466	654	771	c358	86	78	342
27	322	143	304	215	290	451	491	1,330	c262	89	86	246
28	938	140	270	205	295	459	422	1,220	c710	84	200	168
29	813	140	240	195	280	1,470	385	777	1,100	78	212	132
30	548	140	220	185		4,030	363	565	676	73	147	109
31	371		200	180		6,550		706		70	120	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	7,591	938	57	245	0.763	0.88
November	7,638	522	140	255	.794	.89
December	22,734	2,040	143	733	2.28	2.63
Calendar year 1939	192,645	5,650	39	528	1.64	22.32
January	10,044	1,190	180	324	1.01	1.16
February	15,849	1,770	160	547	1.70	1.83
March	31,630	6,550	270	1,020	3.18	3.67
April	75,244	7,030	363	2,508	7.81	8.71
May	15,964	1,330	259	515	1.60	1.84
June	17,722	2,320	190	591	1.84	2.05
July	5,071	580	70	164	.511	.59
August	2,814	212	57	90.8	.283	.33
September	3,543	342	65	118	.368	.41
Water year 1939-40	215,844	7,030	57	590	1.84	24.99

Peak discharge.- Apr. 1 (1 a.m.) 8,390 sec.-ft.; Apr. 4 (12:30 a.m.) 7,860 sec.-ft.; Apr. 9 (2 a.m.) 4,140 sec.-ft.; Apr. 21 (2 a.m.) 3,430 sec.-ft.

*Winter discharge measurement made on this day.

c Backwater from debris on control; discharge computed on basis of gage heights and one discharge measurement.

Note.- Stage-discharge relation affected by ice Dec. 28 to Jan. 12, Jan. 18 to Feb. 8, Feb. 23 to Mar. 1, Mar. 10-17.

Tionesta Creek at Lynch, Pa.

Location.- Water-stage recorder, lat. 41°36'05", long. 79°03'00", at highway bridge at Lynch, Forest County, 500 feet upstream from Bluejay Creek and 7 miles south of Sheffield. Datum of gage is 1,252.43 feet above mean sea level (unadjusted).

Drainage area.- 233 square miles.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge during year, 6,250 second-feet Apr. 4 (gage height, 8.30 feet); minimum, 31 second-feet Aug. 25.

1938-40: Maximum discharge, that of Apr. 4, 1940; minimum, 11 second-feet Sept. 24, 25, 1939 (gage height, 0.70 foot).

Remarks.- Records good except those for period of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	187	295	121	230	100	200	3,620	456	667	440	111	285
2	92	245	158	210	100	200	2,600	694	634	332	92	128
3	61	214	779	200	*100	230	2,790	560	490	289	85	103
4	48	188	1,020	200	100	360	5,600	555	418	257	75	82
5	42	181	656	190	105	860	4,280	485	359	213	71	71
6	38	197	529	*180	110	640	2,800	450	301	185	99	62
7	38	214	458	170	150	490	2,140	418	281	159	131	53
8	86	f366	463	165	200	*415	2,380	395	328	147	85	224
9	696	f429	395	160	180	380	3,510	404	310	137	66	406
10	252	f354	391	155	210	350	2,180	354	250	153	60	224
11	238	372	758	155	550	330	1,630	328	261	162	53	176
12	180	337	554	150	680	310	2,490	301	366	216	47	140
13	132	299	581	145	830	340	1,840	305	265	150	69	128
14	110	291	607	350	750	310	1,110	285	220	117	88	111
15	98	271	493	580	650	290	1,050	273	199	106	58	98
16	86	260	453	370	550	280	960	328	179	193	45	95
17	76	252	468	270	480	270	799	305	156	135	44	82
18	70	238	478	230	450	460	1,860	281	227	103	44	75
19	65	220	443	200	490	2,140	1,870	273	468	92	96	66
20	67	203	1,790	180	520	1,340	1,960	598	261	85	77	62
21	67	194	1,600	165	470	960	2,360	465	224	75	52	68
22	79	184	1,090	150	400	782	1,920	422	185	71	44	92
23	96	175	849	140	340	618	1,430	475	172	91	36	68
24	90	163	678	135	300	515	1,140	2,100	307	153	34	72
25	81	154	613	125	270	440	924	1,360	421	100	32	798
26	218	137	493	120	240	440	772	1,080	297	274	68	373
27	371	135	424	115	225	386	640	1,500	261	409	77	250
28	924	143	370	110	215	398	540	1,220	289	220	117	199
29	591	129	320	105	210	734	475	960	480	176	78	169
30	410	124	280	105		1,500	431	777	359	189	57	147
31	332		250	105		*3,100		722		137	190	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,921	924	38	191	0.820	0.95
November	6,964	429	124	232	.996	1.11
December	18,562	1,790	121	599	2.57	2.96
Calendar year 1939	141,104	2,810	11	387	1.66	22.52
January	5,865	580	105	189	.811	.93
February	9,975	830	100	344	1.48	1.60
March	20,068	3,100	200	647	2.78	3.21
April	58,101	5,600	431	1,937	8.31	9.27
May	19,129	2,100	273	617	2.65	3.06
June	9,635	667	156	321	1.38	1.54
July	5,566	440	71	180	.773	.89
August	2,281	190	32	73.6	.316	.36
September	4,907	798	53	164	.704	.79
Water year 1939-40	166,974	5,600	32	456	1.96	26.67

Peak discharge.- Apr. 1 (4 a.m.) 4,390 sec.-ft.; Apr. 4 (6 a.m.) 6,250 sec.-ft.; Apr. 9 (6 a.m.) 4,060 sec.-ft.

*Winter discharge measurement made on this day.

f Discharge based on partial gage-height record.

Note.- Stage-discharge relation affected by ice Dec. 28 to Mar. 18.

Tionesta Creek at Nebraska, Pa.

Location.- Staff gage, lat. 41°28'25", long. 79°23'05", 500 feet downstream from highway bridge at Nebraska, Forest County, and a third of a mile downstream from Coon Creek. Datum of gage is 1,079.00 feet above mean sea level (Pennsylvania State highway bench mark).

Drainage area.- 469 square miles (revised).

Records available.- October 1931 to September 1940 in reports of U. S. Geological Survey; October 1909 to September 1911 in reports of Flood Commission of Pittsburgh, 1911; August 1923 to September 1940 in reports of Pennsylvania Department of Forests and Waters (discontinued).

Average discharge.- 15 years (1925-40), 842 second-feet.

Extremes.- Maximum discharge during year, 12,000 second-feet Apr. 4, from study of outflow and change in contents of Tionesta Creek Reservoir and comparison with records for station at Lynch; maximum gage height, 12.0 feet Apr. 5, from graph based on gage readings, affected by backwater from Tionesta Creek Dam; minimum discharge observed, 62 second-feet Aug. 25 (gage height, 0.38 foot).
1909-11, 1923-40: Maximum discharge, 21,900 second-feet Mar. 4, 1934 (gage height, 11.4 feet, from graph based on gage readings), from rating curve extended above 15,500 second-feet; minimum, 25 second-feet Sept. 7-10, 25, 1927.

Remarks.- Records good except those for periods of ice effect and those for period of backwater from Tionesta Creek Dam, all of which are fair. Gage read twice daily.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	410	565	187	380	160	310	8,480	835	1,440	800	156	515
2	206	485	271	370	160	300	5,090	1,440	1,440	620	133	266
3	124	410	1,020	360	*155	510	4,560	1,130	1,090	510	121	173
4	93	360	1,720	350	150	900	c10,200	1,130	905	435	113	140
5	80	312	1,130	*340	150	1,350	c7,680	975	770	360	107	115
6	75	336	905	320	170	1,200	c5,280	905	650	312	110	99
7	70	385	770	310	200	1,000	3,770	835	620	263	198	90
8	276	565	770	295	250	*880	4,070	770	800	238	152	90
9	1,350	740	680	280	230	800	7,330	770	650	214	110	344
10	600	620	620	270	370	730	4,230	680	538	312	93	315
11	360	650	1,420	*265	1,100	640	2,960	620	485	410	88	242
12	336	620	1,130	265	1,200	560	5,090	565	740	485	80	187
13	233	538	1,050	270	1,500	640	3,490	592	592	360	77	166
14	184	510	1,170	450	1,250	*550	2,710	565	460	233	124	136
15	156	485	940	1,400	1,000	500	2,130	510	410	195	110	133
16	136	460	835	1,150	870	480	1,820	592	360	360	83	121
17	121	435	835	800	780	460	1,530	592	312	312	72	115
18	113	410	835	580	760	540	3,790	538	336	210	77	110
19	104	385	770	480	800	4,000	3,920	510	620	180	115	96
20	104	360	2,840	400	850	4,700	4,070	905	485	159	152	93
21	107	312	2,960	330	800	2,020	5,090	870	385	146	104	90
22	113	290	2,020	290	650	1,620	4,070	740	290	133	77	99
23	133	290	1,530	260	550	1,260	2,960	877	267	127	70	113
24	143	267	1,260	240	500	1,050	2,350	4,370	360	187	67	93
25	127	242	1,050	220	430	900	1,920	2,960	592	166	65	681
26	331	214	905	210	380	820	1,530	2,350	510	163	104	668
27	810	195	800	195	360	800	1,260	3,770	410	482	146	360
28	1,920	242	620	185	340	850	1,050	2,830	385	350	180	267
29	1,350	202	530	180	330	2,670	905	2,130	725	242	152	221
30	835	195	450	170		3,350	800	1,620	620	246	115	195
31	650		410	165		6,690		1,620		202	140	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11,650	1,920	70	376	0.802	0.92
November	12,080	740	195	403	.859	.96
December	32,433	2,960	187	1,046	2.23	2.57
Calendar year 1939	252,887	4,770	27	693	1.48	20.02
January	11,780	1,400	165	380	.810	.93
February	16,445	1,500	150	567	1.21	1.30
March	43,070	6,680	300	1,389	2.96	3.41
April	114,135	10,200	800	3,804	8.11	9.05
May	39,596	4,370	510	1,277	2.72	3.14
June	18,247	1,440	267	608	1.30	1.45
July	9,412	800	127	304	.648	.75
August	3,491	198	65	113	.241	.28
September	6,333	681	90	211	.450	.50
Water year 1939-40	318,672	10,200	65	871	1.86	25.26

*Winter discharge measurement made on this day.
c Stage-discharge relation affected by backwater from Tionesta Creek Dam; discharge determined from study of outflow and change in contents of Tionesta Creek Reservoir, and by comparison with records for station at Lynch.
Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 19, Mar. 24-28.

Oil Creek at Rouseville, Pa.

Location.- Chain gage, lat. 41°28'55", long. 79°41'40", at highway bridge 400 feet upstream from Cherrytree Run, 1 mile upstream from Rouseville, Venango County, and 1½ miles upstream from former site. Datum of gage is 1,028.33 feet above mean sea level (unadjusted).

Drainage area.- 300 square miles, including area of Cherrytree Run.

Records available.- June 1932 to September 1940.

Extremes.- Maximum discharge during year, 7,020 second-feet Apr. 4 (gage height, 8.20 feet); minimum discharge observed, 44 second-feet Sept. 23 (gage height, 2.01 feet).

1932-40: Maximum discharge observed, 11,300 second-feet Jan. 25, 1937 (gage height, 9.85 feet); minimum observed, 22 second-feet July 29, Sept. 5, 7, 1934 (gage height, 1.76 feet).

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily. Records include discharge of Cherrytree Run. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	245	141	180	130	260	5,600	415	1,260	633	71	116
2	105	214	136	170	125	287	2,820	664	1,670	415	66	94
3	79	217	271	165	120	375	2,660	546	858	324	62	92
4	71	210	760	160	115	1,090	5,800	546	633	268	64	83
5	66	184	518	150	110	1,350	3,100	465	492	228	66	73
6	62	164	346	145	110	960	1,790	415	392	194	85	66
7	58	152	283	145	125	695	1,260	415	346	181	136	58
8	90	200	316	145	150	574	1,380	368	312	166	100	56
9	350	415	316	150	180	518	4,020	368	295	166	77	62
10	239	324	342	155	*275	440	1,980	346	256	178	70	77
11	349	346	1,410	*160	1,290	368	1,180	320	506	210	64	70
12	310	346	828	180	1,560	304	3,360	299	653	224	58	66
13	175	256	664	270	1,790	392	2,040	287	346	158	62	62
14	139	260	890	589	1,100	346	1,350	287	268	141	112	64
15	121	256	574	1,620	633	368	1,100	279	228	131	85	64
16	114	242	465	946	490	346	1,460	440	214	228	64	58
17	107	220	518	574	450	324	1,030	440	191	175	58	58
18	98	200	518	370	430	451	1,980	392	251	128	58	55
19	90	184	440	340	465	2,380	1,920	346	1,100	116	126	49
20	90	178	1,450	310	664	1,860	2,340	415	536	112	107	53
21	94	164	1,100	290	604	1,030	3,480	368	346	100	77	53
22	96	164	728	270	440	890	1,800	316	272	102	70	49
23	107	158	518	250	415	518	1,180	354	242	94	64	44
24	144	146	415	230	368	450	890	1,670	392	90	62	49
25	131	149	368	210	346	380	728	1,260	728	90	60	211
26	161	131	346	190	275	360	633	909	440	90	116	133
27	413	109	260	180	308	360	546	1,610	324	112	126	90
28	1,100	139	240	170	308	443	492	1,030	364	90	133	73
29	731	123	230	160	268	1,580	415	664	1,300	85	107	73
30	415	116	210	150		4,510	415	604	695	77	81	70
31	304		190	140		5,990		1,160		75	98	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	6,561	1,100	58	212	0.707	0.82
November	6,212	415	109	207	.690	.77
December	15,791	1,450	136	509	1.70	1.96
Calendar year 1939	168,013	5,840	35	460	1.53	20.83
January	9,164	1,620	140	296	.987	1.14
February	13,644	1,790	110	470	1.57	1.69
March	30,199	5,990	260	974	3.25	3.75
April	58,749	5,800	415	1,958	6.53	7.29
May	17,998	1,670	279	581	1.94	2.24
June	15,910	1,670	191	530	1.77	1.97
July	5,381	633	75	174	.580	.67
August	2,585	136	58	83.4	.278	.32
September	2,221	211	44	74.0	.247	.28
Water year 1939-40	184,415	5,990	44	504	1.68	22.90

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 28 to Jan. 13, Jan. 18 to Feb. 10, Feb. 16 to Feb. 18, Mar. 24-27.

French Creek at Carters Corners, Pa.

Location.- Chain gage, lat. 41°57'20", long. 79°52'40", at highway bridge at Carters Corners, Erie County, 4 miles northwest of Union City and 5 miles upstream from South Branch of French Creek. Datum of gage is 1,235.7 feet above mean sea level.

Drainage area.- 208 square miles.

Records available.- October 1919 to September 1920; October 1932 to September 1940 in reports of U. S. Geological Survey; May 1910 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 24 years (1910-16, 1919-29, 1932-40), 411 second-feet.

Extremes.- Maximum discharge during year, 6,420 second-feet Apr. 4 (gage height, 9.2 feet, from graph based on gage readings); minimum discharge observed, 13 second-feet Aug. 15, 17 (gage height, 0.65 foot).

1910-40: Maximum discharge observed, 11,700 second-feet Mar. 25, 1913, from rating curve extended above 7,000 second-feet; maximum gage height, about 15.2 feet Mar. 12, 1920 (caused by ice jam); minimum discharge not determined.

Remarks.- Records fair except those for periods of ice effect, which are poor. Gage read twice daily. Some regulation at low stages.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	209	96	200	195	220	4,840	252	531	171	d18	151
2	116	166	292	190	185	310	3,060	308	486	151	d18	116
3	110	166	680	185	175	500	2,990	363	422	106	d18	87
4	74	156	1,300	180	170	1,300	5,330	344	252	89	d19	59
5	46	258	982	180	160	1,680	3,550	274	206	106	d23	42
6	35	224	626	180	*155	1,840	3,920	227	158	95	27	41
7	30	209	464	175	180	1,060	2,200	201	132	83	40	40
8	52	274	626	*170	270	650	2,110	218	112	62	29	43
9	236	382	578	170	380	578	2,830	206	114	50	28	48
10	344	308	573	170	650	422	1,950	187	99	46	21	59
11	268	308	1,260	180	2,050	*295	964	148	102	46	15	62
12	185	233	956	200	2,830	310	1,020	132	110	46	16	70
13	d140	230	750	250	3,010	290	1,080	139	106	40	18	95
14	d120	198	750	550	2,740	260	964	134	93	35	20	a112
15	d98	209	700	1,490	2,310	240	776	146	83	28	15	a95
16	d88	204	750	1,120	1,600	240	941	156	69	28	14	a74
17	d82	192	800	800	1,200	245	1,080	146	76	27	15	59
18	d76	161	750	620	900	308	1,330	166	78	25	26	51
19	d72	136	531	510	970	1,120	1,400	209	69	28	52	46
20	d70	127	443	450	1,020	1,260	1,610	233	93	35	35	50
21	74	130	402	400	920	1,140	1,840	215	127	35	30	48
22	71	123	382	360	600	720	1,080	230	108	33	24	48
23	68	116	344	330	480	500	802	239	97	27	20	59
24	78	112	291	310	380	420	486	375	125	26	19	51
25	64	110	310	290	320	330	382	731	146	25	20	214
26	79	104	290	270	270	290	344	657	161	25	26	218
27	162	92	270	250	240	280	274	650	144	26	36	158
28	809	98	250	240	225	464	252	839	151	23	89	100
29	787	98	260	230	220	1,290	227	964	166	22	58	56
30	464	100	250	215		3,300	215	675	179	d21	56	53
31	268		220	205		4,460		422		d19	130	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	5,226	809	30	169	0.812	0.94
November	5,433	382	92	181	.870	.97
December	17,176	1,300	96	554	2.66	3.07
Calendar year 1939	132,132	6,470	14	362	1.74	23.62
January	11,070	1,490	170	357	1.72	1.98
February	24,805	3,010	155	855	4.11	4.43
March	26,322	4,460	220	849	4.08	4.70
April	49,847	5,330	215	1,662	7.99	8.91
May	10,186	964	132	329	1.58	1.82
June	4,795	531	69	160	.769	.86
July	1,579	171	19	50.9	.245	.28
August	975	130	14	31.5	.151	.17
September	2,405	218	40	80.2	.386	.43
Water year 1939-40	159,819	5,330	14	437	2.10	28.56

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations downstream.
d Faulty gage-height record; discharge computed on basis of records for stations downstream.
Note.- Stage-discharge relation affected by ice Dec. 25 to Jan. 14, Jan. 18 to Feb. 10, Feb. 16 to Mar. 4, Mar. 11-16, 22-27.

French Creek at Venango, Pa.

Location.- Wire-weight gage, lat. 41°46'35", long. 80°06'30", at highway bridge at Venango, Crawford County, 1.5 miles upstream from Gravel Run and 2.0 miles downstream from Boles Run. Datum of gage is 1,117.18 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 597 square miles.

Records available.- December 1938 to September 1940.

Extremes.- Maximum discharge during year, 11,300 second-feet Apr. 1 (gage height, 11.1 feet, from graph based on gage readings); minimum discharge observed, 59 second-feet Aug. 18, 24, 25 (gage height, 1.22 feet).

1938-40: Maximum discharge, 12,500 second-feet Feb. 21, 1939 (gage height, 11.70 feet); minimum discharge observed, 49 second-feet Sept. 2, 3, 1939 (gage height, 1.11 feet).

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily. Slight regulation at low stages from operation of small mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	182	560	230	380	400	600	11,000	585	2,800	560	72	420
2	218	560	260	340	380	710	9,400	800	2,470	488	64	355
3	194	890	472	340	360	970	7,280	890	1,580	375	68	295
4	156	960	1,680	350	340	3,150	8,270	830	1,030	295	63	230
5	123	770	2,050	360	320	4,100	9,480	740	740	260	74	189
6	103	610	1,330	380	330	2,800	6,330	660	585	230	127	154
7	94	535	860	400	*460	2,050	3,520	610	560	203	205	137
8	94	535	740	*410	610	1,760	2,800	535	610	194	162	125
9	106	830	1,060	420	960	1,410	4,300	585	442	205	119	110
10	605	740	845	420	1,630	1,100	5,000	560	375	205	92	154
11	504	660	2,530	420	3,590	960	2,800	465	398	196	76	160
12	560	685	2,580	430	5,280	1,030	3,910	398	398	194	74	196
13	420	585	1,670	500	5,430	800	4,720	398	375	189	68	218
14	315	510	1,760	948	4,860	740	3,160	398	295	162	63	205
15	260	510	1,460	3,120	4,040	710	2,580	398	260	152	81	194
16	230	488	860	3,400	2,690	710	3,040	465	230	198	75	191
17	218	442	1,170	2,470	2,150	740	3,400	510	218	230	63	180
18	191	420	1,330	1,650	1,490	995	3,160	488	295	184	65	145
19	180	375	1,250	1,500	1,580	3,060	3,520	465	890	173	114	129
20	173	335	1,500	1,300	2,050	4,240	3,280	535	770	145	169	121
21	167	315	2,300	1,100	2,250	2,920	5,000	535	535	129	133	117
22	160	295	1,760	930	1,760	2,250	3,910	442	375	119	106	115
23	173	295	1,410	810	1,410	1,410	2,250	375	295	110	84	121
24	203	295	890	720	1,100	1,250	1,490	1,840	295	106	65	129
25	194	278	890	650	890	890	1,170	3,280	420	96	63	250
26	200	260	710	590	740	800	960	1,850	488	103	99	398
27	295	245	620	550	660	890	860	1,330	375	99	129	315
28	1,090	230	560	510	620	830	740	1,330	692	96	184	230
29	1,670	230	580	480	600	2,710	685	860	1,100	92	230	194
30	1,100	230	480	450		6,980	610	800	685	87	297	171
31	740		420	420		9,400		2,530		76	465	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,918	1,670	94	352	0.590	0.68
November	14,673	960	230	489	.819	.91
December	36,257	2,580	230	1,170	1.96	2.26
Calendar year 1939	338,227	11,800	50	927	1.55	21.08
January	26,748	3,400	340	863	1.45	1.67
February	48,980	5,430	320	1,689	2.83	3.05
March	62,965	9,400	600	2,031	3.40	3.92
April	118,625	11,000	610	3,954	6.62	7.39
May	26,487	3,280	375	854	1.43	1.65
June	20,581	2,800	218	686	1.15	1.28
July	5,951	560	76	192	.322	.37
August	3,749	465	63	121	.203	.23
September	5,948	420	110	198	.332	.37
Water year 1939-40	381,882	11,000	63	1,043	1.75	23.78

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 27 to Jan. 13, Jan. 18 to Feb. 9, Feb. 26 to Mar. 1.

French Creek at Utica, Pa.

Location.- Water-stage recorder, lat. 41°26'15", long. 79°57'20", at highway bridge at Utica, Venango County, a third of a mile upstream from Mill Creek. Datum of gage is 1,019.54 feet above mean sea level (general adjustment of 1907).

Drainage area.- 1,028 square miles.

Records available.- August 1932 to September 1940.

Extremes.- Maximum discharge during year, 13,900 second-feet Apr. 2 (gage height, 10.00 feet); minimum, 95 second-feet Aug. 15, 16, 18 (gage height, 1.40 feet).

1932-40: Maximum discharge, 19,200 second-feet Mar. 27, 1936 (gage height, 11.57 feet), from rating curve extended above 14,000 second-feet; minimum, 43 second-feet July 30, 1934 (gage height, 1.03 feet).

Maximum stage known, about 15.7 feet during flood of March 1913 (discharge, 35,600 second-feet, from rating curve extended above 14,000 second-feet).

Remarks.- Records good except those for periods of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	220	882	316	480	540	1,010	13,600	1,090	5,240	1,800	132	769
2	234	710	332	460	500	1,020	13,900	1,200	5,060	1,310	117	672
3	272	723	418	440	470	1,530	12,400	1,470	4,120	942	110	545
4	245	1,090	962	440	450	3,990	12,700	1,420	2,730	720	104	455
5	203	1,030	2,410	450	430	5,240	12,400	1,260	1,860	600	106	368
6	173	852	2,120	460	420	5,060	11,800	1,140	1,360	520	136	292
7	148	736	1,480	480	600	4,370	8,360	1,010	1,130	460	246	239
8	179	686	1,080	500	820	3,560	5,800	879	1,310	414	300	218
9	191	782	1,240	510	*1,130	2,940	5,800	830	1,310	409	257	201
10	270	1,030	1,190	530	1,520	2,400	6,590	846	1,010	427	189	195
11	552	912	1,840	*550	3,910	1,860	5,800	776	888	418	150	198
12	656	860	3,300	600	4,670	1,580	5,990	672	924	455	132	204
13	656	817	2,840	700	5,550	1,470	6,590	606	846	400	117	215
14	486	710	2,670	1,180	5,800	1,470	6,190	606	727	342	106	228
15	380	626	2,410	3,120	4,880	1,360	4,880	630	630	305	99	250
16	324	614	1,790	3,380	4,040	1,310	4,460	798	545	565	95	257
17	292	590	1,580	3,160	3,320	1,220	5,240	879	475	440	108	242
18	260	562	1,740	2,670	2,730	1,640	5,060	862	573	418	106	228
19	238	518	1,900	2,000	3,090	5,230	5,240	790	1,130	351	156	201
20	223	465	2,120	1,750	2,600	6,590	6,390	762	1,690	296	162	179
21	210	440	2,950	1,650	2,940	5,990	7,600	798	1,470	257	208	167
22	206	412	2,480	1,450	2,870	5,060	7,190	734	1,000	225	182	159
23	200	394	1,630	1,300	2,340	3,800	5,420	636	660	204	148	150
24	200	385	1,290	*1,100	2,030	2,730	3,640	1,260	612	195	124	178
25	242	390	1,110	1,000	1,640	2,150	2,660	4,280	666	179	117	316
26	264	372	1,090	890	1,420	1,740	2,150	4,040	806	186	189	360
27	310	349	882	800	1,240	1,640	1,800	2,940	790	221	232	505
28	692	332	640	730	1,170	1,650	1,520	2,400	862	186	276	422
29	1,930	320	660	670	1,110	3,900	1,310	1,910	1,970	170	284	321
30	1,740	316	580	620		8,660	1,150	1,420	2,090	159	369	257
31	1,230		520	580		12,100		3,180		145	661	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	13,426	1,930	148	433	0.421	0.49
November	18,905	1,090	316	630	.613	.68
December	47,570	3,300	316	1,535	1.49	1.72
Calendar year 1939	533,190	12,400	78	1,461	1.42	19.30
January	34,650	3,380	440	1,118	1.09	1.26
February	64,230	5,800	420	2,215	2.15	2.32
March	104,270	12,100	1,010	3,364	3.27	3.77
April	193,630	13,900	1,150	6,454	6.28	7.01
May	42,124	4,280	606	1,359	1.32	1.52
June	44,484	5,240	475	1,483	1.44	1.61
July	13,719	1,800	145	443	.431	.50
August	5,718	661	95	185	.180	.21
September	8,991	769	150	300	.292	.33
Water year 1939-40	591,717	13,900	95	1,617	1.57	21.42

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 28 to Jan. 13, Jan. 19 to Feb. 9.

Sugar Creek at Sugarcreek, Pa.

Location.- Water-stage recorder, lat. 41°25'45", long. 79°52'45", at highway bridge three-quarters of a mile north of Sugarcreek, Venango County, three-quarters of a mile upstream from mouth, and 3 miles northwest of Franklin. Datum of gage is 1,016.03 feet above mean sea level (general adjustment of 1912). Prior to Dec. 9, 1939, chain gage at same site and datum.

Drainage area.- 166 square miles.

Records available.- August 1932 to September 1940.

Extremes.- Maximum discharge during year, 4,070 second-feet Mar. 31 (gage height, 6.47 feet); minimum, 23 second-feet Sept. 18, 19, 21; minimum daily, 27 second-feet Sept. 21, 22.

1932-40: Maximum discharge, 8,690 second-feet Jan. 25, 1937 (gage height, 8.5 feet, from graph based on gage readings); minimum discharge observed, 9.2 second-feet Oct. 22, 1935; minimum daily discharge, 10 second-feet Oct. 14, 1934.

Remarks.- Records good except those for periods of ice effect and those for period of doubtful gage-height record, all of which are fair. Gage read twice daily prior to Dec. 9. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	110	45	66	64	136	1,730	249	986	390	46	58
2	45	94	53	63	59	140	1,045	311	854	252	45	53
3	36	88	66	61	57	276	1,360	283	548	208	43	53
4	33	81	135	59	55	757	2,070	270	398	178	43	48
5	30	67	99	58	53	593	1,090	234	311	151	42	43
6	30	69	101	57	52	485	709	225	265	130	52	40
7	39	67	76	56	57	404	533	210	237	115	70	38
8	154	78	74	56	70	334	1,040	196	262	104	46	38
9	148	95	72	57	90	288	1,880	192	257	109	42	40
10	71	92	78	*58	*140	244	935	174	206	116	40	37
11	66	99	283	58	984	209	722	160	338	121	38	37
12	64	99	180	69	730	185	1,740	151	268	123	37	36
13	58	95	212	88	884	197	1,045	149	208	90	37	36
14	58	81	247	281	510	220	775	149	176	82	40	32
15	59	76	182	595	381	233	622	147	162	81	36	32
16	42	69	164	300	307	217	519	220	144	247	36	31
17	39	64	180	239	264	197	434	220	130	117	36	30
18	38	62	164	204	241	455	838	192	156	92	38	31
19	36	62	151	177	264	1,430	673	180	378	82	98	28
20	36	64	496	d162	345	935	1,570	196	210	74	46	28
21	36	59	326	d155	285	668	1,470	167	171	71	38	27
22	34	54	241	d150	231	537	900	158	144	65	34	27
23	36	58	184	d140	223	390	628	190	136	64	34	28
24	36	54	153	*d130	200	315	490	844	317	62	32	41
25	48	54	134	110	180	264	398	595	215	58	34	183
26	172	56	128	100	155	234	342	425	190	65	81	67
27	416	51	94	90	142	233	297	456	162	74	83	48
28	416	51	85	84	159	343	265	320	277	58	86	42
29	296	53	85	78	138	1,300	244	257	378	55	53	38
30	164	48	75	72		f1,980	230	270	341	52	53	37
31	122		70	68		2,570		1,140		52	71	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,914	416	30	94.0	0.566	0.65
November	2,150	110	48	71.7	.432	.48
December	4,633	496	45	149	.898	1.04
Calendar year 1939	85,151	2,280	20	233	1.40	19.09
January	3,941	595	56	127	.765	.88
February	7,320	984	52	252	1.52	1.64
March	16,769	2,570	136	541	3.26	3.76
April	26,594	2,070	230	886	5.34	5.96
May	8,930	1,140	147	288	1.73	1.99
June	8,825	986	130	294	1.77	1.97
July	3,538	390	52	114	.687	.79
August	1,510	98	32	48.7	.293	.34
September	1,307	183	27	43.6	.263	.29
Water year 1939-40	88,431	2,570	27	242	1.46	19.79

Peak discharge.- Mar. 30 (11:30 p.m.) 4,070 sec.-ft.; Apr. 4 (12:30 a.m.) 3,770 sec.-ft.; Apr. 9 (1 a.m.) 3,570 sec.-ft.; Apr. 12 (5:30 a.m.) 2,490 sec.-ft.; Apr. 20 (3:30 p.m.) 2,370 sec.-ft.
*Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed by comparison with records for nearby stations.
f Discharge based on partial gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 28 to Jan. 9, Jan. 25 to Feb. 10.

Clarion River at Cooksburg, Pa.

Location.- Water-stage recorder, lat. 41°19'50", long. 79°18'35", at highway bridge at Cooksburg, Forest County, 300 feet downstream from Toms Run and 5 miles upstream from Canther Run. Datum of gage is 1,146.48 feet above mean sea level (general adjustment of 1912).

Drainage area.- 807 square miles.

Records available.- November 1938 to September 1940.

Extremes.- Maximum discharge during year, 17,800 second-feet Apr. 1 (gage height, 11.34 feet); minimum, 105 second-feet Aug. 25 (gage height, 1.52 feet).

1938-40: Maximum discharge, that of Apr. 1, 1940; minimum, 41 second-feet Aug. 30, 1939 (gage height, 1.22 feet).

Maximum stage known, about 19 feet, from floodmarks, Mar. 17, 1936 (discharge not determined).

Remarks.- Records good except those for periods of ice effect, which are fair. Slight regulation from industrial plants upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	709	1,690	378	720	290	600	15,600	1,540	1,490	1,240	255	374
2	533	1,460	387	580	*280	600	10,300	1,820	1,540	1,220	215	511
3	307	1,210	730	700	275	660	8,720	1,820	1,310	870	190	316
4	214	1,050	1,380	660	270	1,100	14,800	1,720	1,090	743	175	228
5	173	924	1,380	*620	270	2,240	13,300	1,580	916	743	164	187
6	161	893	1,080	580	300	2,080	8,960	1,440	780	578	150	158
7	150	932	964	540	340	1,740	6,640	1,310	667	480	153	140
8	178	1,220	956	520	385	1,600	5,800	1,220	1,200	425	175	140
9	1,440	1,740	964	500	360	1,510	8,960	1,270	1,310	393	170	2,530
10	1,630	1,460	893	470	450	1,340	6,640	1,270	980	449	145	1,580
11	750	1,380	1,320	460	840	1,250	4,850	1,090	788	490	129	892
12	512	1,420	1,640	450	1,500	1,150	6,360	1,010	1,400	916	122	590
13	400	1,250	1,340	450	2,550	1,050	5,800	980	1,660	774	119	460
14	322	1,140	1,510	640	1,800	1,000	4,500	996	1,130	512	158	388
15	272	1,080	1,380	1,400	1,450	960	3,690	956	878	397	161	334
16	242	1,000	1,210	2,100	1,250	920	3,130	940	758	449	145	322
17	217	956	1,250	1,500	1,100	880	2,630	1,000	641	519	124	393
18	196	886	1,290	1,150	1,000	901	3,770	900	559	406	117	322
19	181	817	1,210	960	1,050	4,800	7,080	840	648	326	161	272
20	181	743	2,960	740	1,100	4,850	6,860	1,510	715	284	164	241
21	181	672	5,030	620	950	3,620	8,720	2,290	524	252	184	224
22	205	624	3,470	540	880	3,000	7,520	1,770	454	228	145	211
23	276	598	2,750	480	840	2,400	5,400	1,580	393	224	119	224
24	311	554	2,180	440	780	2,080	4,240	1,770	406	218	112	215
25	283	506	1,880	410	740	1,830	3,470	1,680	711	308	107	274
26	356	463	1,690	390	690	1,600	2,870	1,770	848	269	129	1,060
27	2,410	418	1,460	360	650	1,510	2,460	2,660	722	266	158	615
28	7,620	404	1,290	340	640	1,460	2,130	2,340	654	558	238	425
29	3,830	404	1,100	330	620	2,400	1,820	1,820	779	709	276	350
30	2,510	382	980	310		7,260	1,630	1,540	996	384	228	303
31	1,930		840	300		14,600		1,490		322	230	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	28,680	7,620	150	925	1.15	1.33
November	28,276	1,740	382	943	1.17	1.31
December	46,892	5,030	378	1,513	1.87	2.16
Calendar year 1939	428,774	7,620	43	1,175	1.46	19.77
January	20,260	2,100	300	654	.810	.93
February	23,650	2,550	270	816	1.01	1.09
March	72,991	14,600	600	2,355	2.92	3.37
April	188,650	15,600	1,630	6,288	7.79	8.69
May	45,922	2,660	840	1,481	1.84	2.12
June	26,947	1,660	393	898	1.11	1.24
July	15,952	1,240	218	515	.638	.74
August	5,118	276	107	165	.204	.24
September	14,279	2,530	140	476	.590	.66
Water year 1939-40	517,617	15,600	107	1,414	1.75	23.88

Peak discharge.- Apr. 1 (6 a.m.) 17,800 sec.-ft.; Apr. 4 (11 a.m.) 16,700 sec.-ft.; Apr. 9 (11 a.m.) 10,000 sec.-ft.

*Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 4, Mar. 11-17.

Clarion River near Piney, Pa.

Location.- Lat. 41°11'30", long. 79°26'00", at hydroelectric plant of Clarion River Power Co., 2½ miles upstream from Piney, Clarion County, and 3 miles southwest of Clarion.

Drainage area.- 951 square miles.

Records available.- October 1933 to September 1940 in reports of U. S. Geological Survey; October 1924 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 16 years, 1,540 second-feet (adjusted).

Remarks.- Discharge computed from powerhouse records. Regulation caused by operation of hydroelectric plant at Piney Dam (reservoir capacity, 1,474,000,000 cubic feet).

Cooperation.- Powerhouse records furnished by Clarion River Power Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	1,320	374	59	1,080	946	14,900	1,780	2,450	1,090	517	414
2	412	1,470	324	288	618	1,220	10,800	2,060	685	1,220	61	476
3	317	1,430	571	323	61	185	8,860	2,020	1,480	1,690	62	446
4	260	260	1,640	261	62	2,150	10,700	1,890	1,220	62	62	63
5	109	764	1,180	379	316	2,440	12,900	1,080	1,100	613	158	220
6	63	1,260	828	764	549	2,200	8,540	1,500	868	684	325	376
7	63	956	978	62	511	2,000	6,060	1,520	617	292	61	120
8	74	1,440	1,310	476	1,010	1,350	6,030	1,300	1,220	499	62	314
9	1,420	1,610	353	441	1,640	1,980	9,490	1,450	1,510	330	62	2,490
10	1,910	1,710	730	413	404	1,040	6,690	1,620	1,100	476	104	1,770
11	640	1,070	1,540	1,080	1,060	1,360	5,430	1,020	815	635	63	386
12	326	321	1,490	967	2,360	1,080	6,660	189	2,260	852	112	495
13	338	1,110	1,680	146	2,630	1,060	6,360	1,140	1,530	886	171	666
14	142	1,040	1,200	209	2,850	1,330	4,700	1,380	9,560	293	113	63
15	73	920	1,910	1,430	2,030	1,270	4,080	1,280	440	405	114	263
16	535	1,060	1,210	1,330	1,440	648	3,780	1,330	135	617	63	459
17	427	1,430	345	1,060	2,240	994	3,320	1,130	672	535	160	284
18	241	409	1,060	988	856	1,690	3,830	470	823	483	77	283
19	165	303	1,270	883	1,700	4,420	7,640	126	682	434	261	488
20	176	853	3,040	540	1,520	4,860	8,530	1,330	690	209	301	397
21	189	814	4,610	233	1,330	4,100	10,000	2,570	479	194	62	109
22	61	949	4,060	566	1,100	3,920	7,900	1,610	392	310	62	63
23	282	324	3,840	540	1,050	3,150	5,870	1,730	452	359	63	259
24	267	673	1,620	594	2,190	1,590	4,500	1,500	457	334	63	477
25	366	263	1,060	1,030	82	1,590	3,960	2,720	862	408	63	1,010
26	730	63	1,790	747	448	1,460	3,590	1,100	1,250	521	306	689
27	2,200	549	1,220	62	759	2,360	2,760	3,250	803	355	347	610
28	5,440	453	2,160	63	748	2,350	1,480	3,060	687	102	203	122
29	3,930	352	1,680	535	963	2,850	2,360	2,380	793	654	241	136
30	2,950	403	1,230	387		6,000	1,450	1,560	1,560	921	357	240
31	1,890		57	341		13,900		2,470		287	189	

Month	Observed				Change in contents** (mean sec.-ft.)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	26,162	5,440	61	844	+7	851	0.895	1.03
November	25,579	1,710	63	853	+6	859	.903	1.01
December	46,360	4,610	57	1,495	-49	1,446	1.52	1.75
Calendar year 1939	448,926	7,070	57	1,230	-1	1,229	1.29	17.53
January	17,197	1,430	59	555	+62	617	.649	.75
February	33,607	2,850	61	1,159	-8	1,151	1.21	1.30
March	77,493	13,900	185	2,500	+13	2,513	2.64	3.04
April	193,170	14,900	1,450	6,439	-18	6,421	6.75	7.53
May	49,565	3,250	126	1,599	-17	1,582	1.66	1.91
June	37,592	9,560	135	1,253	+12	1,265	1.33	1.48
July	16,750	1,690	62	540	-1	539	.567	.65
August	4,865	517	61	157	+19	176	.185	.21
September	14,188	2,490	63	473	-5	468	.492	.55
Water year 1939-40	542,528	14,900	57	1,482	+2	1,484	1.56	21.21

**Change in contents in Piney Reservoir.

Redbank Creek at Mayport, Pa.

Location.- Chain gage, lat. 41°02'00", long. 79°15'05", at highway bridge at Mayport, Clarion County, 0.7 mile upstream from Pine Creek, 1.5 miles downstream from Little Sandy Creek, and 1¼ miles northeast of Hawthorn. Datum of gage is 1,073.41 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 458 square miles.

Records available.- July 1938 to September 1940 (discontinued).

Extremes.- Maximum discharge during year, 12,800 second-feet Mar. 31; maximum gage height observed, 13.10 feet Feb. 13, 14, ice jam; minimum discharge (estimated), 21 second-feet Oct. 17-19.

1938-40: Maximum discharge, that of Mar. 31, 1940; maximum gage height observed, that of Feb. 13, 14; minimum discharge (estimated), 17 second-feet Sept. 2, 3, 1939.

Maximum stage known, 17.7 feet, from floodmark, in March 1936 (discharge not determined).

Remarks.- Records fair except those for period of ice effect and those for periods of doubtful gage-height record, all of which are poor. Gage read twice daily.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	218	66	150	80	330	8,010	580	1,160	1,690	105	222
2	72	181	74	145	78	380	4,850	735	1,120	1,080	84	205
3	58	158	108	140	75	540	3,440	670	842	735	74	143
4	49	123	193	135	74	1,850	3,300	610	670	610	66	108
5	44	123	181	*135	74	2,300	3,300	522	550	468	64	92
6	41	136	158	130	95	1,500	2,250	495	415	370	106	92
7	35	154	129	120	105	*1,000	1,690	440	375	308	96	92
8	d32	d200	99	115	110	850	1,690	390	350	257	99	114
9	d27	d220	92	110	100	720	2,960	390	390	226	79	114
10	d25	d215	96	105	250	620	2,490	390	340	201	66	303
11	d26	185	105	100	1,500	510	2,010	345	271	f231	60	555
12	d27	154	136	95	1,350	470	3,020	303	248	f365	54	335
13	d26	165	181	95	1,500	500	2,370	294	226	702	49	218
14	d24	151	173	200	1,400	540	1,900	331	169	415	54	161
15	d23	140	239	1,000	1,100	520	1,440	285	158	308	51	154
16	d22	123	218	880	1,000	480	1,120	312	161	340	52	133
17	d21	117	222	700	900	450	1,490	340	151	289	56	117
18	d21	105	239	500	780	955	2,130	308	792	222	52	99
19	d21	105	205	350	650	4,200	3,160	294	2,130	181	111	89
20	d22	99	f1,100	270	700	2,880	5,500	818	1,220	143	96	82
21	d24	92	1,740	220	620	2,370	6,060	1,260	610	136	76	76
22	d26	89	1,080	180	550	1,790	4,680	960	415	105	66	70
23	d30	94	735	150	520	1,390	3,300	702	331	108	52	66
24	58	86	550	130	480	1,000	2,250	580	345	205	51	64
25	54	74	400	115	390	735	1,590	550	326	143	49	140
26	60	76	300	*105	340	610	1,260	893	317	126	102	222
27	122	92	260	100	320	640	1,000	1,790	415	189	99	185
28	1,170	68	220	95	320	1,280	805	1,160	370	181	136	126
29	670	76	200	90	320	2,420	670	880	892	154	136	102
30	360	54	180	86		7,590	610	842	1,080	165	114	92
31	253		160	82		10,800		960		136	114	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,517	1,170	21	113	0.247	0.28
November	3,873	220	54	129	.282	.31
December	9,839	1,740	66	317	.692	.80
Calendar year 1939	197,396	4,360	17	541	1.18	16.02
January	6,828	1,000	82	220	.480	.55
February	15,781	1,500	74	544	1.19	1.28
March	52,220	10,800	330	1,685	3.68	4.24
April	80,345	8,010	610	2,678	5.85	6.53
May	19,429	1,790	294	627	1.37	1.58
June	16,839	2,130	151	561	1.22	1.36
July	10,789	1,690	105	348	.760	.88
August	2,469	136	49	79.6	.174	.20
September	4,571	555	64	152	.332	.37
Water year 1939-40	226,500	10,800	21	619	1.35	18.38

*Winter discharge measurement made on this day.
d Doubtful gage height record; discharge computed on basis of records for station at St. Charles.
f Discharge based on partial gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 17.

Redbank Creek at St. Charles, Pa.

Location.- Water-stage recorder, lat. 40°59'40", long. 79°23'40", 500 feet downstream from industrial railroad bridge at St. Charles, Clarion County, 0.3 mile downstream from Leatherwood Creek, and 3 miles west of New Bethlehem. Datum of gage is 973.14 feet above mean sea level (general adjustment of 1907). Prior to July 10, 1940, chain gage at site 500 feet upstream. Datum of gage was 976.24 feet above mean sea level (general adjustment of 1907).

Drainage area.- 528 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1909 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 27 years (1910-14, 1915-16, 1918-40), 879 second-feet.

Extremes.- Maximum discharge during year, 12,400 second-feet Mar. 31 (gage height, 9.4 feet, from graph based on gage readings), from rating curve extended above 3,000 second-feet on basis of slope-area determination at gage height 18.60 feet; minimum discharge observed, 23 second-feet Oct. 18 (gage height, 0.11 foot).
1909-40: Maximum discharge, 35,200 second-feet Mar. 18, 1936 (gage height, 18.60 feet, from floodmarks, site and datum then in use), by slope-area method; minimum discharge observed, 10 second-feet Aug. 9, 1910.

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily prior to July 10. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	255	85	170	110	358	8,880	675	1,260	2,200	159	264
2	85	213	92	160	*110	465	6,180	855	1,420	1,420	132	261
3	65	178	128	160	105	674	4,240	855	1,120	985	111	229
4	53	163	178	150	105	2,060	4,750	765	855	735	98	166
5	46	145	201	*150	105	2,590	4,000	675	705	620	87	132
6	41	151	189	145	125	1,760	2,800	565	592	465	109	97
7	36	178	167	135	150	1,340	2,140	540	490	358	159	72
8	36	213	147	130	170	1,190	1,800	490	442	303	129	119
9	31	226	139	130	150	1,050	3,860	465	515	270	118	176
10	28	226	128	125	280	765	2,940	465	420	270	101	636
11	29	213	155	120	1,800	620	2,140	420	339	312	82	685
12	30	201	189	120	2,020	592	3,400	378	339	1,230	71	409
13	28	189	155	130	2,390	675	2,800	358	270	836	68	275
14	27	167	201	200	1,700	648	2,140	358	240	542	68	212
15	25	163	213	1,210	1,260	648	1,700	399	213	384	64	178
16	26	155	213	1,050	1,120	648	1,510	399	240	409	61	170
17	25	139	226	800	1,050	620	1,260	399	201	357	68	149
18	23	128	255	540	920	680	2,750	378	1,210	296	68	134
19	25	121	255	400	705	4,680	4,490	339	2,390	245	124	118
20	25	121	f934	330	795	3,690	7,680	524	1,620	206	121	110
21	28	110	f1,860	280	735	2,660	8,550	1,300	920	176	106	104
22	28	105	1,340	250	592	2,200	6,180	1,120	648	155	93	93
23	34	99	855	220	565	1,340	4,160	795	515	155	75	87
24	64	92	705	190	540	1,120	2,600	735	515	258	63	81
25	67	89	520	170	465	795	1,910	675	490	219	57	138
26	72	85	430	160	378	765	1,420	735	465	246	98	227
27	152	75	300	145	358	795	1,260	1,960	465	357	142	261
28	1,420	85	250	135	321	1,530	985	1,800	465	284	195	183
29	890	82	220	130	399	2,660	855	1,260	980	232	190	142
30	480	75	200	120		4,800	735	1,050	1,340	250	172	120
31	358		180	115		11,100		1,340		206	199	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,349	1,420	23	140	0.265	0.31
November	4,442	255	75	148	.280	.31
December	11,110	1,860	85	358	.678	.78
Calendar year 1939	231,142	6,070	18	633	1.20	16.27
January	8,270	1,210	115	267	.506	.58
February	19,523	2,390	105	673	1.27	1.37
March	55,518	11,100	358	1,791	3.39	3.91
April	100,115	8,880	735	3,337	6.32	7.05
May	23,072	1,960	339	744	1.41	1.63
June	21,684	2,390	201	723	1.37	1.53
July	14,981	2,200	155	483	.915	1.05
August	3,388	199	57	109	.206	.24
September	6,028	685	72	201	.381	.42
Water year 1939-40	272,480	11,100	23	744	1.41	19.18

*Winter discharge measurement made on this day.
f Discharge based on partial gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 25 to Jan. 14, Jan. 17 to Feb. 10.

Mahoning Creek at Punxsutawney, Pa.

Location.- Water-stage recorder, lat. 40°56'25", long. 78°58'20", 500 feet upstream from bridge on U. S. Highway 119 in Punxsutawney, Jefferson County, and 1 mile upstream from Sawmill Run. Datum of gage is 1,219.44 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 149 square miles.

Records available.- October 1938 to September 1940.

Extremes.- Maximum discharge during year, 5,030 second-feet Mar. 31 (gage height, 8.86 feet); minimum, 8.2 second-feet Oct. 19 (gage height, 0.63 foot); minimum daily, 12 second-feet Oct. 19.
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum, 2.6 second-feet Sept. 26, 1939 (gage height, 0.50 foot); minimum daily, that of Oct. 19, 1939.
Maximum stage known, 15.6 feet, from floodmark, Mar. 18, 1936 (discharge not determined).

Remarks.- Records good except those for periods of no gage-height record, which are fair. Considerable regulation at low stages from operation of pumps at mines three-quarters of a mile upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	54	25	63	50	109	2,190	225	257	762	63	171
2	20	44	29	71	54	113	1,240	230	230	426	60	90
3	18	37	37	65	54	169	982	206	192	302	58	66
4	18	33	41	66	52	531	1,140	192	165	252	53	58
5	f17	37	39	57	49	546	850	169	143	192	49	50
6	a16	46	35	61	58	386	612	156	128	156	51	46
7	a15	57	31	53	142	308	487	a148	120	139	65	41
8	a16	72	31	54	148	268	692	a139	139	124	53	67
9	a16	71	31	52	120	230	1,110	f135	135	113	50	185
10	a15	57	31	46	144	201	806	124	109	112	45	115
11	a15	57	49	45	596	176	635	120	106	136	42	96
12	a15	46	40	44	467	161	809	109	106	606	43	77
13	15	44	49	46	602	177	643	109	93	271	43	66
14	14	41	60	115	390	182	542	124	84	182	46	58
15	13	37	49	370	313	178	450	120	85	148	40	65
16	13	35	49	230	248	165	413	124	86	210	40	99
17	14	35	54	179	219	162	372	116	71	148	40	71
18	13	33	52	143	211	449	892	113	117	124	37	63
19	12	31	49	119	206	2,470	1,040	134	577	106	96	55
20	14	29	318	131	206	1,210	2,210	1,070	275	96	54	a51
21	16	29	330	103	182	831	2,070	590	169	f93	41	a48
22	23	28	212	98	154	612	1,420	386	139	a93	37	f53
23	16	31	155	84	152	420	985	296	124	a106	38	48
24	15	29	124	77	142	326	734	252	143	f117	35	48
25	14	26	115	75	143	265	549	262	139	102	34	120
26	46	24	105	71	117	232	435	258	143	90	70	104
27	115	23	87	71	118	257	345	908	132	100	65	74
28	200	25	90	64	124	641	296	522	161	103	68	66
29	100	21	83	59	113	1,070	257	352	302	80	55	69
30	65	24	80	59		3,530	230	279	346	74	49	71
31	52		72	52		4,170		279		69	100	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	978	200	12	31.5	0.211	0.24
November	1,156	72	21	38.5	.258	.29
December	2,552	330	25	82.3	.552	.64
Calendar year 1939	67,856	1,480	12	186	1.25	16.93
January	2,823	370	44	91.1	.611	.70
February	5,574	602	49	192	1.29	1.39
March	20,545	4,170	109	663	4.45	5.13
April	25,436	2,210	230	848	5.69	6.35
May	8,247	1,070	109	266	1.79	2.06
June	5,016	577	71	167	1.12	1.25
July	5,632	762	69	182	1.22	1.41
August	1,620	100	34	52.3	.351	.40
September	2,291	185	41	76.4	.513	.57
Water year 1939-40	81,870	4,170	12	224	1.50	20.43

Peak discharge.- Mar. 19 (6:30 a.m.) 3,170 sec.-ft.; Mar. 31 (3:30 a.m.) 5,030 sec.-ft.; Apr. 20 (10:30 a.m.) 2,500 sec.-ft.
a No gage-height record; discharge computed on basis of records for stations downstream.
f Discharge based on partial gage-height record.
Note.- Discharge for period of backwater from debris on control, Apr. 27 to June 30, computed on basis of two discharge measurements, gage heights, and records for stations downstream.

Mahoning Creek near Dayton, Pa.

Location.- Chain gage, lat. 40°54'05", long. 79°13'35", at Independence Bridge, three-quarters of a mile upstream from Foundry Run and 1 3/4 miles northeast of Dayton, Armstrong County. Datum of gage is 1,095.24 feet above mean sea level (general adjustment of 1907).

Drainage area.- 321 square miles.

Records available.- October 1920 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1916 to September 1940 in reports of Pennsylvania Department of Forests and Waters (discontinued).

Average discharge.- 20 years (1920-40), 556 second-feet.

Extremes.- Maximum discharge during year, 8,570 second-feet Mar. 31 (gage height, 8.4 feet, from graph based on gage readings); minimum discharge observed, 15 second-feet Oct. 18, 19 (gage height, 1.57 feet).
1916-40: Maximum discharge observed, 22,800 second-feet Mar. 18, 1936 (gage height, 14.53 feet), by slope-area method; minimum observed, 8.0 second-feet Oct. 17, 1928 (gage height, 1.40 feet).

Remarks.- Records good except those below 50 second-feet, those for periods of ice effect, and those for periods of doubtful gage-height record, all of which are fair. Gage read twice daily. Slight regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	94	35	105	95	230	4,770	429	820	1,760	82	246
2	52	82	50	105	90	240	2,620	464	740	1,140	77	208
3	40	76	80	100	90	398	2,200	423	595	780	71	123
4	24	71	92	*96	88	1,940	2,910	383	482	595	66	93
5	21	67	85	92	88	1,930	1,800	323	389	452	61	80
6	21	65	80	88	95	1,140	1,290	288	323	348	61	71
7	19	73	71	84	200	860	1,090	293	283	283	77	66
8	20	99	71	80	350	700	1,380	255	333	246	74	64
9	20	94	71	76	320	595	3,060	265	417	212	66	118
10	18	92	76	74	370	488	2,200	246	274	191	d60	216
11	17	89	85	72	1,400	412	1,450	229	333	187	d52	180
12	17	85	94	70	1,500	353	1,560	212	333	421	d50	137
13	16	76	105	110	1,500	446	1,400	195	242	535	d48	105
14	16	71	118	200	1,240	429	1,190	229	187	303	d52	85
15	16	67	116	700	780	446	995	251	176	237	d54	102
16	16	63	110	450	595	383	860	203	199	313	d55	99
17	16	62	110	350	500	363	950	203	137	255	d50	123
18	15	62	121	290	520	1,020	1,580	180	d150	195	d50	93
19	15	d58	162	250	420	5,320	3,280	252	d800	165	147	74
20	17	d50	488	220	450	3,140	5,440	1,340	868	140	123	66
21	22	d45	544	200	410	1,930	4,860	1,190	429	123	85	64
22	34	d43	465	180	360	1,450	3,360	740	318	111	66	74
23	31	d42	a330	160	330	995	2,200	595	265	117	d50	71
24	28	d40	220	150	310	700	1,450	506	246	126	d46	69
25	31	40	160	135	310	630	1,090	470	313	143	d43	150
26	38	29	140	*125	*270	595	860	662	323	114	66	274
27	202	26	130	120	240	560	700	2,320	303	130	88	154
28	568	35	125	115	250	1,200	560	1,450	387	120	105	126
29	258	26	120	110	250	2,080	470	950	995	120	93	105
30	224	27	115	105		5,650	434	665	780	130	88	93
31	159		110	100		8,080		860		99	144	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,056	568	15	66.3	0.207	0.24
November	1,849	99	26	61.6	.192	.21
December	4,679	544	35	151	.470	.54
Calendar year 1939	161,633	4,100	15	443	1.38	18.70
January	5,112	700	70	165	.514	.59
February	13,421	1,500	88	463	1.44	1.55
March	44,703	8,080	230	1,442	4.49	5.18
April	58,009	5,440	434	1,934	6.02	6.72
May	17,071	2,320	180	551	1.72	1.98
June	12,440	995	137	415	1.29	1.44
July	10,091	1,760	99	326	1.02	1.18
August	2,250	147	43	72.6	.226	.26
September	3,529	274	64	118	.368	.41
Water year 1939-40	175,210	8,080	15	479	1.49	20.30

*Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records at Mahoning Creek Dam.
d Doubtful gage-height record; discharge computed on basis of records for other stations in same drainage basin.
Note.- Discharge for periods of backwater from leaves, Oct. 8-26, computed on basis of records for other stations in same drainage basin. Stage-discharge relation affected by ice Nov. 27 to Dec. 1, Dec. 24 to Feb. 13, Feb. 17 to Mar. 2.

Mahoning Creek at Mahoning Creek Dam, Pa.

Location.- Water-stage recorder, lat. 40°55'40", long. 79°17'30", at highway bridge at McCrea Furnace, three-quarters of a mile downstream from Mahoning Creek Dam, Armstrong County, 1 mile southwest of Eddyville, and 2 miles upstream from Pine Run. Datum of gage is 1,003.39 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark). Prior to Feb. 1, 1940, chain gage at same site and datum.

Drainage area.- 344 square miles.

Records available.- August 1938 to September 1940.

Extremes.- Maximum discharge during year, 9,300 second-feet Mar. 31 (gage height, 7.83 feet); minimum discharge observed, 16 second-feet Oct. 15-17.

1938-40: Maximum discharge, that of Mar. 31, 1940: minimum discharge observed, that of Oct. 15-17, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily prior to Feb. 1. Some regulation owing to construction operations at Mahoning Creek Dam.

Cooperation.- Results of two discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	104	40	110	*110	242	4,860	458	900	1,680	92	268
2	46	85	43	105	105	245	2,640	514	878	1,300	82	232
3	33	76	68	105	105	398	1,950	452	713	855	76	134
4	31	68	91	100	100	1,820	2,540	416	560	666	71	99
5	28	68	91	*98	100	1,890	1,890	367	458	508	68	83
6	27	75	78	94	120	1,270	1,400	330	377	386	68	72
7	24	83	75	90	230	940	1,080	308	326	316	73	62
8	21	100	76	86	400	755	1,240	274	326	274	80	64
9	19	115	71	82	370	633	2,700	269	420	238	70	147
10	18	113	71	78	420	531	1,950	261	312	208	65	222
11	18	104	80	76	1,500	432	1,500	238	340	232	59	184
12	17	91	98	74	1,550	386	1,770	222	367	519	53	142
13	17	75	108	74	1,600	437	1,550	212	278	642	51	110
14	17	78	122	130	1,190	447	1,290	222	222	353	56	93
15	16	71	122	788	755	469	1,070	245	187	261	56	91
16	16	66	117	680	652	411	956	238	187	313	58	95
17	16	62	117	389	548	377	900	238	162	317	51	124
18	17	59	122	330	560	759	1,950	215	148	218	51	93
19	17	59	131	290	469	5,470	2,860	201	838	184	108	76
20	17	52	439	260	514	3,190	4,960	1,250	913	159	151	70
21	20	46	1,160	230	458	2,010	4,960	1,240	474	142	86	65
22	28	45	715	210	382	1,500	3,540	818	348	129	63	69
23	33	43	468	190	348	1,090	2,340	626	286	122	52	65
24	32	40	296	170	321	811	1,660	525	278	170	48	64
25	27	39	185	160	321	678	1,250	508	294	174	45	108
26	43	32	160	150	269	554	972	590	339	134	53	248
27	80	27	140	140	242	566	783	1,900	321	142	89	157
28	407	38	135	130	261	1,220	646	1,520	289	153	112	115
29	296	27	125	125	274	1,860	548	1,010	886	132	99	97
30	170	28	120	120		5,780	491	755	840	140	78	87
31	117		115	115		8,630		878		110	119	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,717	407	16	55.4	0.161	0.19
November	1,969	115	27	65.6	.191	.21
December	5,779	1,160	40	186	.541	.62
Calendar year 1939	164,021	4,170	16	449	1.31	17.73
January	5,779	788	74	186	.541	.62
February	14,274	1,600	100	492	1.43	1.54
March	45,801	8,630	242	1,477	4.29	4.95
April	58,246	4,960	491	1,942	5.65	6.30
May	17,300	1,900	201	558	1.62	1.87
June	13,267	900	148	442	1.28	1.43
July	11,177	1,680	110	361	1.05	1.21
August	2,283	151	45	73.6	.214	.25
September	3,536	268	62	118	.343	.38
Water year 1939-40	181,128	8,630	16	495	1.44	19.57

Peak discharge.- Mar. 19 (2 p.m.) 6,660 sec.-ft.; Apr. 4 (8 a.m.) 3,100 sec.-ft.; Apr. 9 (8 a.m.) 3,190 sec.-ft.; Apr. 20 (6 p.m.) 5,960 sec.-ft.

*Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 26 to Jan. 14, Jan. 18 to Feb. 11.

Little Mahoning Creek at McCormick, Pa.

Location.- Water-stage recorder, lat. 40°50'10", long. 79°06'35", 200 feet downstream from highway bridge at McCormick, Indiana County, 1 mile west of Georgeville, 1.7 miles upstream from Ross Run, and 4 miles southeast of Smicksburg. Datum of gage is 1,164.88 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark). Prior to May 10, 1940, chain gage at site 200 feet upstream at same datum.

Drainage area.- 87.4 square miles.

Records available.- October 1939 to September 1940.

Extremes.- Maximum discharge during year, 3,480 second-feet Mar. 31 (gage height, 10.1 feet, from graph based on gage readings), from rating curve extended above 2,000 second-feet; minimum discharge observed, 1.8 second-feet Nov. 25 (gage height, 1.75 feet), but may have been less during period of no gage-height record.

Remarks.- Records good except those for periods of ice effect and those for period of no gage-height record, all of which are fair. Gage read twice daily prior to May 10.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a8.0	20	5.8	21	12	50	1,040	79	225	650	6.5	67
2	a5.5	15.0	8.8	19	11	56	520	100	203	322	4.8	30
3	a3.5	9.6	12.0	17	11	80	372	82	163	201	4.4	18.5
4	a3.5	9.2	15.5	16	11	450	695	74	129	151	3.4	14.5
5	a3.5	9.9	16.5	14	11	478	400	62	103	107	2.8	10.5
6	a2.5	15.5	16.0	*13	14	289	267	57	86	77	3.0	7.4
7	a2.5	16.5	15.5	12	32	236	206	54	76	58	4.9	6.5
8	a2.5	25	17.5	12	38	167	336	47	84	49	6.2	6.7
9	a2.5	26	18.5	11	35	134	732	57	104	40	4.4	22
10	a2.5	23	15.5	11	40	100	428	56	66	33	3.4	27
11	a2.5	17.5	14.5	11	250	80	300	48	72	31	2.8	31
12	a2.5	15.5	19.5	10	270	70	368	44	77	119	2.6	17.0
13	a2.5	14.0	27	13	300	75	312	42	58	63	2.6	14.0
14	a2.0	12.5	35	60	210	80	246	41	43	36	11.5	10.5
15	a2.0	9.6	35	150	150	70	196	40	34	26	10.0	10.5
16	a2.0	9.2	33	95	130	65	186	42	34	39	4.8	10.5
17	a2.0	9.6	30	60	110	60	176	42	30	31	3.6	9.5
18	a2.0	7.2	27	40	100	335	622	38	71	22	3.3	7.1
19	a2.0	7.2	29	32	105	1,910	642	42	455	18.0	28	5.9
20	a2.0	6.1	203	26	105	945	1,530	350	194	15.5	19.0	5.0
21	a2.5	6.4	206	23	95	374	1,190	201	116	13.0	8.0	5.8
22	a5.0	6.1	150	20	80	312	800	145	84	10.5	5.0	11.5
23	3.5	6.6	100	18	70	256	487	116	73	10.0	3.8	9.0
24	2.0	3.2	75	16	65	167	300	99	70	12.0	3.4	6.5
25	3.2	2.5	62	*15	60	134	236	116	77	12.0	3.4	52
26	13.5	4.9	52	14	56	120	176	160	105	9.5	5.4	53
27	37	3.0	45	13	54	127	134	1,150	79	8.0	12.5	27
28	114	4.2	37	13	52	336	106	457	89	10.0	17.5	21
29	46	4.4	32	12	50	409	94	268	454	15.5	12.5	17.0
30	25	3.9	28	12		1,660	82	195	259	15.5	9.0	14.5
31	20		24	12		2,400		245		8.5	35	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	329.7	114	2.0	10.6	0.121	0.14
November	323.3	26	2.5	10.8	.124	.14
December	1,405.6	206	5.8	45.3	.518	.60
Calendar year						
January	811	150	10	26.2	.300	.35
February	2,527	300	11	87.1	.997	1.08
March	12,025	2,400	50	388	4.44	5.12
April	13,179	1,530	82	439	5.02	5.60
May	4,549	1,150	38	147	1.68	1.94
June	3,713	455	30	124	1.42	1.58
July	2,213.0	650	8.0	71.4	.817	.94
August	247.5	35	2.6	7.98	.091	.10
September	548.4	67	5.0	18.3	.209	.23
Water year 1939-40	41,871.5	2,400	2.0	114	1.30	17.82

*Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for stations on Mahoning Creek at Punxsutawney and near Dayton.

Note.- Stage-discharge relation affected by ice Dec. 22 to Mar. 4, Mar. 11-17.

Crooked Creek at Idaho, Pa.

Location.- Water-stage recorder, lat. 40°39'15", long. 79°21'00", at highway bridge at Idaho, Armstrong County, 1½ miles downstream from Plum Creek and 2½ miles west of Shelocta. Datum of gage is 961.04 feet above mean sea level (Buffalo, Rochester & Pittsburgh Railway bench mark).

Drainage area.- 191 square miles.

Records available.- February 1938 to September 1940.

Extremes.- Maximum discharge during year, 5,240 second-feet Apr. 20 (gage height, 9.61 feet); minimum, 2.4 second-feet Oct. 8; minimum daily, 2.8 second-feet Oct. 8.

1938-40: Maximum discharge, 7,170 second-feet June 22, 1939 (gage height, 11.40 feet); minimum, that of Oct. 8, 1939; minimum daily, that of Oct. 8, 1939.

Maximum stage known, 18.6 feet, from floodmark, in March 1936 (discharge not determined).

Remarks.- Records good except those for periods of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.0	35	17.5	40	*34	156	1,800	163	775	545	29	140
2	11.5	32	18.5	37	33	295	970	186	685	360	25	73
3	8.8	25	47	35	31	1,190	798	153	483	257	20	47
4	7.5	21	60	32	30	2,810	1,890	142	345	200	17.0	33
5	6.8	23	55	30	29	1,620	1,050	122	249	142	14.5	25
6	4.1	35	49	*28	32	887	625	107	186	110	18.0	18.0
7	4.1	42	46	26	45	565	448	100	153	90	23	15.5
8	2.8	46	44	25	85	428	809	85	190	78	20	24
9	7.7	44	37	24	80	333	1,880	97	424	69	14.5	74
10	5.6	37	37	24	170	255	1,050	87	362	64	14.0	71
11	4.9	32	49	24	1,200	194	685	76	747	86	13.0	66
12	4.9	32	40	*30	798	177	970	71	802	375	12.5	45
13	4.1	31	48	40	605	214	752	71	422	140	11.5	34
14	4.9	24	62	250	428	258	605	71	265	94	11.0	26
15	4.9	23	55	900	294	317	472	73	202	76	12.5	24
16	6.2	21	55	407	233	258	411	78	179	114	12.5	25
17	4.9	20	62	255	211	228	368	71	130	80	10.5	21
18	4.9	18.5	55	161	214	743	1,370	66	126	60	10.5	18.0
19	6.8	19.5	49	110	202	3,000	1,590	62	334	49	33	14.5
20	7.5	19.5	407	90	261	1,330	4,620	231	184	43	24	14.5
21	8.2	17.5	505	80	289	762	3,280	179	132	34	17.0	13.0
22	8.8	18.5	304	70	249	525	1,850	134	110	33	13.0	11.5
23	8.2	19.5	180	64	219	362	1,020	112	97	31	11.5	11.5
24	9.4	18.5	130	58	185	267	645	110	120	33	11.0	10.5
25	11.0	16.5	99	54	202	205	452	130	107	33	11.0	73
26	34	12.5	85	50	164	169	339	134	107	26	19.0	66
27	104	15.0	65	45	148	169	265	1,120	87	50	42	36
28	227	16.5	55	42	171	548	213	575	340	56	34	25
29	87	14.0	50	40	148	711	184	351	752	80	24	23
30	55	17.0	46	38		2,440	163	260	525	82	24	20
31	40		43	36		3,830		809		45	108	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	716.5	227	2.8	23.1	0.121	0.14
November	746.0	46	12.5	24.9	.130	.15
December	2,855.0	505	17.5	92.1	.482	.56
Calendar year 1939	90,258.9	3,270	2.8	247	1.29	17.60
January	3,145	900	24	101	.529	.61
February	6,790	1,200	29	234	1.23	1.33
March	25,246	3,830	156	814	4.26	4.91
April	31,574	4,620	163	1,052	5.51	6.15
May	6,026	1,120	62	194	1.02	1.18
June	9,620	802	87	321	1.68	1.87
July	3,535	545	26	114	.597	.69
August	660.5	108	10.5	21.3	.112	.13
September	1,098.0	140	10.5	36.6	.192	.21
Water year 1939-40	92,012.0	4,620	2.8	251	1.31	17.93

Peak discharge.- Mar. 19 (7 a.m.) 3,620 sec.-ft.; Mar. 31 (5 a.m.) 4,520 sec.-ft.; Apr. 20 (1 p.m.) 5,240 sec.-ft.

*Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 26 to Jan. 14, Jan. 19 to Feb. 11. Discharge for periods of backwater from debris on control, Oct. 1-10, Dec. 2-6, Sept. 24-30, computed on basis of gage heights and three discharge measurements.

Crooked Creek Reservoir at Crooked Creek Dam, Pa.

Location.- Water-stage recorder, lat. 40°42'50", long. 79°30'30", at control tower at Crooked Creek Dam, Armstrong County, 4 miles south of Ford City and 7 miles upstream from mouth. Datum of gage is mean sea level (Corps of Engineers, U. S. Army, datum, which is 2.07 feet below that of 1929 general adjustment).

Drainage area.- 278 square miles.

Records available.- May to September 1940.

Extremes.- Maximum contents during period, 8,310 acre-feet June 12 (elevation, 848.85 feet); minimum, 1,728 acre-feet Aug. 17 (elevation, 830.39 feet).

Remarks.- Reservoir is formed by an earth-fill dam, rock faced; storage began in May 1940; dam accepted from contractor Oct. 28, 1940. Capacity, 90,060 acre-feet between elevations 809.00 feet (sill of outlet) and 918.00 feet (crest of spillway). Elevation of conservation pool, which is the minimum elevation to which pool will ordinarily be drawn, is 840 feet. Reservoir is used for flood-control purposes. Contents as given herein are computed from elevations at midnight.

Cooperation.- Record furnished by Corps of Engineers, U. S. Army.

Contents, in acre-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									7,892	6,556	5,087	2,651
2									7,865	6,341	5,024	2,862
3									6,437	5,882	4,954	2,973
4									5,662	5,531	4,880	3,042
5									5,243	5,421	4,799	3,072
6									5,010	5,326	4,739	3,090
7									4,902	5,235	4,665	3,093
8									4,906	5,213	4,595	3,138
9									6,591	5,176	4,517	3,294
10									7,172	5,132	4,433	3,480
11									7,845	5,102	4,342	3,664
12									7,840	5,686	4,304	3,773
13									6,657	5,842	4,293	3,845
14									6,253	5,870	4,276	3,890
15									6,059	5,818	3,310	3,932
16									5,802	5,870	1,780	3,971
17									5,391	5,882	1,728	4,002
18									5,198	5,810	1,734	4,027
19									5,372	5,718	1,754	4,044
20									5,254	5,619	1,790	4,048
21									5,109	5,512	1,808	4,055
22									4,991	5,307	1,808	4,055
23									4,854	5,120	1,810	4,055
24									4,912	5,061	1,806	4,076
25									5,028	4,995	1,802	4,198
26									5,128	4,928	1,816	4,402
27									5,180	4,895	1,872	4,492
28									5,750	4,936	1,962	4,521
29								6,979	6,701	5,002	2,002	4,547
30								6,652	6,595	5,124	2,026	4,558
31								7,360		5,132	2,235	

Monthly elevation and contents, May to September 1940.

Date	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
May 31	847.00	7,360	-
June 30	845.33	6,595	-765
July 31	841.68	5,132	-1,463
Aug. 31	832.68	2,235	-2,897
Sept. 30	840.13	4,558	+2,323

Crooked Creek at Crooked Creek Dam, Pa.

(Formerly published as Crooked Creek near Ford City, Pa.)

Location.- Water-stage recorder, lat. 40°43'10", long. 79°30'45", a quarter of a mile downstream from Crooked Creek Dam, Armstrong County, 3½ miles south of Ford City, and 6½ miles upstream from mouth. Datum of gage is 801.58 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark). Prior to Jan. 1, 1940, chain gage at highway bridge 1½ miles downstream. Datum of gage was 786.12 feet above mean sea level (general adjustment of 1907).

Drainage area.- 278 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; October 1909 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 29 years (1910-13, 1914-40), 433 second-feet (adjusted).

Extremes.- Maximum discharge during year (regulated), 6,160 second-feet Apr. 21 (gage height, 8.47 feet); minimum discharge observed, 1.0 second-foot Oct. 11, 19 (gage height, 1.20 feet, site and datum then in use).
1909-40: Maximum discharge, 21,000 second-feet Mar. 18, 1936 (gage height, 17.86 feet, from floodmark, site and datum then in use), by contracted-opening method; minimum discharge observed, 0.1 second-foot Sept. 11, 25, 26, 1932.

Remarks.- Records good except those for periods of ice effect, those for period of partial gage-height record, and those below 10 second-feet, all of which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	49	24	58	39	190	3,910	216	1,000	767	57	16
2	10	44	25	54	37	400	1,920	256	2,390	642	57	16
3	8.4	31	29	51	35	1,080	1,010	291	1,520	637	55	16
4	9.1	26	59	*48	34	3,900	2,040	183	927	502	55	17
5	9.1	30	80	44	*32	e2,700	2,130	104	574	287	55	19
6	9.1	23	68	41	35	e1,300	1,230	86	403	223	57	20
7	6.5	31	61	38	60	e900	576	64	297	177	57	21
8	5.4	46	55	36	100	e600	857	44	256	113	57	20
9	6.0	52	50	34	90	214	2,580	35	263	113	57	17
10	5.4	52	44	33	250	236	1,820	80	274	113	55	18
11	1.6	53	43	33	1,600	293	1,060	66	634	115	55	18
12	2.6	42	54	*38	1,400	248	1,300	70	1,350	115	29	18
13	3.8	32	52	45	1,000	285	1,140	59	1,330	115	15	18
14	3.2	30	68	150	648	328	902	45	621	115	15	15
15	3.8	26	73	1,050	386	477	695	46	420	113	539	13
16	3.8	21	76	692	320	386	576	64	420	113	781	13
17	2.6	22	78	454	250	327	518	64	428	113	36	13
18	2.1	21	70	310	230	543	1,340	64	263	113	11	13
19	1.0	24	80	210	230	3,280	2,260	64	302	110	16	13
20	2.6	19	204	140	272	2,480	4,620	52	354	104	14	13
21	3.2	19	678	110	464	1,230	5,800	45	267	104	14	13
22	9.1	15	525	90	320	792	4,680	46	216	152	14	13
23	8.4	22	412	80	270	537	2,270	48	212	143	15	13
24	6.0	19	250	70	250	399	1,040	49	125	66	15	13
25	7.2	17	148	65	270	423	674	49	82	66	15	14
26	21	19	138	60	230	351	500	49	81	66	15	14
27	125	17	108	55	200	278	391	55	90	40	16	14
28	283	12	78	51	190	512	316	65	99	45	15	26
29	212	13	68	48	210	841	219	312	586	57	15	20
30	94	17	64	44		2,280	209	533	870	57	15	23
31	60		60	42		4,960		1,310		57	17	

Month	Observed				Change in contents** (mean second-feet)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	932.8	283	1.0	30.1	0	30.1	0.108	0.12
November	844	53	12	28.1	0	28.1	.101	.11
December	3,822	678	24	123	0	123	.442	.51
Calendar year 1939	126,917.8	7,130	1.0	348	0	348	1.25	16.84
January	4,274	1,050	33	138	0	138	.496	.57
February	9,452	1,600	32	326	+2.6	329	1.18	1.27
March	32,770	4,960	190	1,057	+60.3	1,117	4.02	4.63
April	48,583	5,800	209	1,619	-59.9	1,559	5.61	6.26
May	4,514	1,310	35	146	+115	261	.939	1.08
June	16,654	2,390	81	555	-12.9	542	1.95	2.18
July	5,553	767	40	179	-23.8	155	.558	.64
August	2,239	781	11	72.2	-47.1	25.1	.090	.10
September	490	26	13	16.3	+39.0	55.3	.199	.22
Water year 1939-40	130,127.8	5,800	1.0	356	+6.3	362	1.30	17.69

*Winter discharge measurement made on this day.
**Change in contents in Crooked Creek Reservoir.
e Fragmentary gage-height record; discharge computed on basis of fragmentary record, gate openings at Crooked Creek Dam, and records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 29 to Jan. 14, Jan. 18 to Feb. 11, Feb. 16-19, Feb. 22 to Mar. 2. Change in reservoir contents estimated October to January, April.

Stony Creek at Hollsopple, Pa.

Location.- Chain gage, lat. 40°12'35", long. 78°55'40", at highway bridge in Hollsopple, Somerset County, 1.2 miles downstream from Quemahoning Creek. Datum of gage is 1,514.69 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 244 square miles.

Records available.- August 1937 to September 1940 (discontinued).

Extremes.- Maximum discharge during year, 12,800 second-feet Mar. 31 (gage height, 10.3 feet, from graph based on gage readings), from rating curve extended above 5,000 second-feet by logarithmic plotting; minimum discharge observed, 10 second-feet Oct. 15, 16, 18, 19, 21 (gage height, 1.78 feet).
1937-40: Maximum discharge, that of Mar. 31, 1940; minimum discharge observed, 5.2 second-feet Aug. 31, 1938 (gage height, 1.73 feet).

Remarks.- Records fair. Gage read twice daily. Some regulation from mine pumpage and storage in Quemahoning Reservoir (capacity, 21,000,000,000 gallons). Water diverted from Quemahoning Reservoir to Cambria plant of Bethlehem Steel Co.

Cooperation.- Records of diversion and change in reservoir contents furnished by Bethlehem Steel Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	188	29	56	*42	130	3,100	204	465	416	56	91
2	39	137	30	53	41	176	1,700	250	302	413	40	85
3	82	76	45	51	41	408	1,230	208	296	245	30	54
4	52	60	71	49	40	702	2,790	174	245	174	30	36
5	34	57	47	*48	44	702	1,700	141	182	134	28	34
6	26	66	39	46	57	545	1,120	131	125	106	26	28
7	22	71	33	45	86	458	835	128	106	88	30	26
8	18	174	41	44	125	355	905	125	522	80	28	51
9	16	221	41	43	200	306	1,620	151	785	72	26	128
10	17	141	39	42	500	238	1,120	138	698	66	24	141
11	15	122	45	43	1,060	196	835	115	376	61	25	151
12	12	93	45	46	702	221	835	103	595	172	23	103
13	12	74	50	50	888	274	595	100	376	118	22	64
14	12	60	57	100	605	269	400	100	217	83	26	47
15	10	55	50	300	355	278	400	94	178	59	22	38
16	10	50	47	240	330	260	945	103	167	94	22	35
17	11	47	68	170	306	247	1,010	109	141	94	22	34
18	10	45	86	120	292	555	1,160	97	118	74	24	28
19	10	43	63	100	287	2,100	1,380	85	346	56	30	26
20	11	39	90	90	269	1,470	3,580	456	255	43	28	26
21	10	34	188	81	243	1,160	2,490	280	148	40	24	24
22	12	34	176	75	205	870	1,700	170	112	36	22	25
23	12	39	140	70	200	638	1,160	148	100	64	20	26
24	12	36	91	65	188	458	660	134	103	104	18	24
25	17	34	66	61	180	408	498	199	94	254	16	48
26	20	33	89	57	165	370	452	208	106	141	36	200
27	70	30	77	54	175	330	406	178	94	85	143	148
28	544	32	70	51	165	605	340	159	124	91	270	52
29	288	36	74	48	*145	1,080	260	128	376	368	212	40
30	122	34	65	46		4,670	226	118	275	134	109	34
31	86		59	44		7,790		302		80	74	

Month	Observed				Diversion and change in contents** (equivalent mean)	Adjusted		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	1,655	544	10	53.4	+40.6	94.0	.385	.44
November	2,161	221	30	72.0	+39.5	112	.459	.51
December	2,111	188	29	68.1	+68.7	137	.561	.65
Calendar year 1939	87,772	2,490	10	240	+95.8	336	1.38	18.73
January	2,388	300	42	77.0	+65.4	142	.582	.67
February	7,936	1,060	40	274	+190	464	1.90	2.05
March	28,269	7,790	130	912	+432	1,344	5.51	6.35
April	35,452	3,580	226	1,182	+96.1	1,278	5.24	5.85
May	5,036	456	85	162	+99.2	261	1.07	1.23
June	8,027	785	94	268	+149	417	1.71	1.91
July	4,045	416	36	130	+77.3	207	.848	.98
August	1,506	270	16	48.6	+21.7	70.3	.288	.33
September	1,847	200	24	61.6	+21.2	82.8	.339	.38
Water year 1939-40	100,433	7,790	10	274	+108	382	1.57	21.35

*Winter discharge measurement made on this day.
**Diversion from and change in contents in Quemahoning Reservoir.
Note.- Stage discharge relation affected by ice Dec. 23 to Feb. 10, Feb. 26 to Mar. 1. Discharge for period of backwater from debris on control, Oct. 10-26, computed on basis of one discharge measurement, gage heights, and records for station at Ferndale.

Stony Creek at Ferndale, Pa.

Location.- Water-stage recorder, lat. 40°17'10", long. 78°55'10", at highway bridge at Ferndale, Cambria County, 0.4 mile downstream from Bens Creek, 1.2 miles upstream from Johnstown city limit, and 5.2 miles upstream from confluence with Little Conemaugh River. Datum of gage is 1,183.84 feet above mean sea level (city of Johnstown datum). Prior to May 17, 1940, chain gage at same site and datum.
Drainage area.- 451 square miles.
Records available.- December 1938 to September 1940.
Extremes.- Maximum discharge during year, 23,900 second-feet Mar. 31 (gage height, 13.3 feet, from high-water mark), from rating curve extended above 12,000 second-feet; minimum discharge observed, 13 second-feet Oct. 15 (gage height, 1.56 feet).
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum discharge observed, 12 second-feet Sept. 24, 1939 (gage height, 1.55 feet).
Remarks.- Records good except those for period of ice effect and those for periods of no gage-height record, all of which are fair. Chain gage read twice daily Oct. 1 to Jan. 5, Apr. 1 to May 17, and once daily Jan. 6-14, 16-30. Regulation from mine pumpage and storage in several reservoirs upstream. The largest reservoirs, Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, and Mill Creek No. 2, have a combined capacity of 1,788,000,000 cubic feet. Water diverted from Quemahoning Reservoir to Cambria plant of Bethlehem Steel Co., and from Mill Creek, Dalton Run, and North Fork of Bens Creek Reservoirs to city of Johnstown.
Cooperation.- Results of five discharge measurements furnished by Corps of Engineers, U. S. Army. Records of diversion and change in reservoir contents furnished by Bethlehem Steel Co. and Johnstown Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	337	60	115	92	323	6,980	541	1,060	1,020	137	158
2	88	254	50	115	90	452	3,960	652	866	882	108	137
3	193	135	84	110	90	890	2,920	541	729	598	92	99
4	102	109	126	110	90	1,390	6,540	475	612	458	75	73
5	58	109	92	*110	100	1,290	3,980	404	490	358	73	59
6	38	120	84	110	135	1,010	2,500	366	395	286	66	52
7	29	135	74	105	175	810	1,860	388	328	248	75	45
8	24	347	104	105	260	700	2,410	355	562	218	70	54
9	19	512	114	100	300	604	3,650	410	1,390	201	58	139
10	18	286	100	100	600	512	2,500	355	1,300	178	51	204
11	18	196	123	98	1,830	482	1,800	305	681	200	46	248
12	15	172	112	105	1,290	512	1,680	273	949	417	42	149
13	16	151	112	110	1,610	635	1,220	273	665	279	40	104
14	15	123	132	200	1,290	604	1,000	282	477	194	83	81
15	14	104	100	660	850	572	1,000	282	406	150	57	65
16	18	95	123	600	770	512	1,980	315	389	213	40	62
17	32	84	165	460	668	528	1,860	278	374	210	46	64
18	17	76	193	320	700	1,610	2,370	245	383	164	53	64
19	16	76	162	250	635	5,220	2,830	226	1,140	132	87	56
20	17	74	312	200	635	3,200	6,840	1,110	849	111	68	49
21	25	70	604	180	572	2,360	4,880	726	508	96	50	39
22	17	68	328	165	512	1,720	3,350	490	400	95	40	36
23	17	62	268	155	482	1,290	2,500	417	352	202	36	35
24	16	70	170	140	424	930	1,860	384	337	322	34	36
25	24	52	120	135	424	810	1,440	508	309	375	35	60
26	49	55	170	*130	362	735	1,160	549	295	237	74	229
27	170	43	*140	120	372	668	955	705	282	182	201	153
28	1,040	56	130	110	397	1,260	772	583	409	131	368	83
29	512	44	140	105	352	2,360	652	464	882	579	312	59
30	230	46	130	*98		9,880	577	417	754	299	180	50
31	238		120	94		13,800		854		189	134	

Month	Observed				Diversion and change in contents** (equivalent mean)	Adjusted		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	3,177	1,040	14	102	+45.0	147	0.326	0.38
November	4,061	512	43	135	+49.3	184	.408	.46
December	4,742	604	50	153	+86.3	239	.530	.61
Calendar year 1939	182,574	6,180	13	500	+102	602	1.33	18.13
January	5,515	660	94	178	+77.4	255	.565	.65
February	16,107	1,830	90	555	+207	762	1.69	1.82
March	57,669	13,800	323	1,860	+440	2,300	5.10	5.88
April	78,026	6,980	577	2,601	+103	2,704	6.00	6.69
May	14,173	1,110	226	457	+106	563	1.25	1.44
June	18,573	1,390	282	619	+156	775	1.72	1.92
July	9,224	1,020	95	298	+86.6	385	.854	.98
August	2,831	368	34	91.3	+29.0	120	.266	.31
September	2,742	248	35	91.4	+27.2	119	.264	.29
Water year 1939-40	216,840	13,800	14	592	+117	709	1.57	21.43

*Winter discharge measurement made on this day.
**Diversion from and change in contents in Quemahoning, North Fork of Ben's Creek, Dalton Run, Mill Creek No. 1, and Mill Creek No. 2 Reservoirs.
Note.- Stage-discharge relation affected by ice Dec. 24 to Feb. 9. Discharge for periods of no gage-height record, Jan. 15, Mar. 18-31, computed on basis of 4 discharge measurements and records for station at Hollsopple.

Conemaugh River at Seward, Pa.

Location.- Water-stage recorder, lat. 40°25'10", long. 79°01'40", at highway bridge at Seward, Westmoreland County, 9 miles northwest of Johnstown. Datum of gage is 1,075.64 feet above mean sea level (unadjusted).
Drainage area.- 715 square miles.
Records available.- May 1938 to September 1940.
Extremes.- Maximum discharge during year, 35,000 second-feet Mar. 31 (gage height, 15.22 feet); minimum, 164 second-feet Oct. 15 (gage height, 2.55 feet).
1938-40: Maximum discharge, that of Mar. 31, 1940; minimum daily, 105 second-feet Dec. 28, 29, 31, 1938 (affected by ice).
Maximum stage known, 26.4 feet, from floodmarks, Mar. 18, 1936 (discharge, about 90,000 second-feet).
Remarks.- Records good. Regulation by steel mills and storage in several reservoirs upstream. The largest reservoirs, Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, Mill Creek No. 2, Hinkston, Saltlick, and Laurel Run, have a combined capacity of 2,060,170,000 cubic feet.
Cooperation.- Records of reservoir contents furnished by Bethlehem Steel Co. and Johnstown Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	271	555	220	296	301	652	13,100	1,140	1,820	1,730	425	432
2	326	558	234	295	301	836	6,900	1,230	1,620	1,600	373	425
3	414	405	282	332	301	1,350	5,140	1,130	1,370	1,220	347	373
4	348	332	326	314	282	2,500	12,300	1,010	1,220	974	327	334
5	271	320	307	326	295	2,540	6,560	935	1,040	822	321	314
6	240	345	288	295	332	1,970	4,080	870	896	706	352	297
7	224	360	277	288	452	1,610	3,080	870	786	630	367	285
8	198	566	314	307	622	1,370	3,780	822	800	590	327	285
9	193	892	345	301	664	1,210	5,610	870	2,670	550	302	346
10	198	632	332	271	919	1,040	3,960	774	2,060	532	291	501
11	206	518	360	282	2,830	918	3,080	684	1,310	669	285	570
12	202	446	368	295	2,300	954	2,980	640	1,450	950	285	455
13	193	390	360	301	3,380	1,250	2,570	620	1,200	747	291	380
14	184	360	390	408	2,460	1,140	2,170	662	948	550	357	321
15	176	345	345	1,150	1,590	1,140	1,960	640	846	489	354	291
16	180	314	339	919	1,370	998	2,520	673	846	570	297	285
17	188	307	382	675	1,220	970	2,710	684	774	580	285	285
18	198	295	464	568	1,280	1,910	3,400	620	750	480	297	273
19	188	282	438	482	1,180	8,870	4,070	580	1,660	440	394	262
20	198	282	534	405	1,180	6,500	11,200	1,740	1,810	402	334	256
21	198	271	1,200	429	1,100	4,360	7,770	1,600	1,100	373	302	251
22	184	271	846	420	944	3,500	5,340	1,170	883	388	285	236
23	184	271	630	412	918	2,580	3,960	1,000	786	464	273	236
24	193	271	558	398	840	2,060	3,080	935	810	714	262	246
25	206	271	394	390	840	1,750	2,510	1,060	774	810	262	302
26	291	250	417	368	719	1,480	2,020	1,160	717	615	438	433
27	518	245	440	339	743	1,510	1,750	1,450	695	540	781	410
28	1,570	245	382	320	780	2,910	1,500	1,280	842	440	834	302
29	1,040	245	446	320	708	4,930	1,350	1,060	1,570	808	756	256
30	564	229	420	320		15,400	1,220	948	1,450	663	533	251
31	420		368	314		23,900		1,370		498	440	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	9,964	1,570	176	321	-64.9	256	0.358	0.41
November	11,073	892	229	369	-58.1	311	.435	.49
December	13,006	1,200	220	420	+13.5	434	.607	.70
Calendar year 1939	375,990	8,720	110	1,030	-2.0	1,028	1.44	19.51
January	12,540	1,150	271	405	-16.1	389	.544	.63
February	30,851	3,380	282	1,064	+108	1,172	1.64	1.77
March	104,108	23,900	652	3,358	+348	3,706	5.18	5.97
April	131,670	13,100	1,220	4,389	-38.0	4,351	6.09	6.79
May	30,227	1,740	580	975	-28.3	947	1.32	1.52
June	35,503	2,670	695	1,183	+20.2	1,203	1.68	1.87
July	21,544	1,730	373	695	-60.4	635	.888	1.02
August	11,777	834	262	380	-117	263	.368	.42
September	9,893	570	236	330	-99.2	231	.323	.36
Water year 1939-40	422,156	23,900	176	1,153	+.5	1,154	1.61	21.95

Peak discharge.- Mar. 19 (3:30 a.m.) 10,500 sec.-ft.; Mar. 31 (1 a.m.) 35,000 sec.-ft.; Apr. 4 (4 a.m.) 15,500 sec.-ft.; Apr. 20 (9 a.m.) 13,200 sec.-ft.
**Change in contents in Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, Mill Creek No. 2, Hinkston, Saltlick, and Laurel Run Reservoirs.

Conemaugh River at Tunnelton, Pa.

Location.- Wire-weight gage, lat. 40°27'15", long. 79°23'30", at highway bridge at Tunnelton, Indiana County, 0.9 mile downstream from Boatyard Run, 3 3/4 miles southeast of Saltsburg, and 5½ miles upstream from confluence with Loyalhanna Creek. Datum of gage is 844.64 feet above mean sea level (general adjustment of 1929).

Drainage area.- 1,358 square miles.

Records available.- October 1939 to September 1940.

Extremes.- Maximum discharge during year, 55,600 second-feet Mar. 31 (gage height, 20.18 feet, from floodmark); minimum discharge observed, 220 second-feet Oct. 18, 20 (gage height, 1.94 feet).

Remarks.- Records good except those for periods of ice effect and those based on gage readings at Bow Dam site, all of which are fair. Gage read twice daily. Flow regulated by steel mills and several reservoirs upstream. The largest reservoirs, Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, Mill Creek No. 2, Hinkston, Saltlick, and Laurel Run, have a combined capacity of 2,060,170,000 cubic feet.

Cooperation.- Records of reservoir contents furnished by Bethlehem Steel Co. and Johnstown Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	f310	596	323	510	530	1,300	25,500	1,850	3,760	3,580	700	700
2	f368	752	330	460	520	1,580	12,900	1,990	3,950	3,230	562	652
3	f490	652	362	470	510	3,080	8,250	1,990	3,060	2,430	512	580
4	f452	482	460	*490	500	7,280	18,300	1,780	2,580	1,850	482	528
5	f362	431	520	490	500	6,800	11,700	1,580	2,140	1,510	396	438
6	f368	438	482	490	540	4,750	7,280	1,440	1,710	1,300	424	403
7	f342	468	452	480	660	3,580	5,180	1,370	1,510	1,110	537	368
8	f298	528	431	470	950	2,740	7,320	1,300	1,510	920	403	356
9	f256	974	490	470	1,400	2,430	12,300	1,300	1,580	862	417	424
10	f262	982	554	450	2,150	1,990	8,000	1,300	2,740	862	417	482
11	f250	752	537	440	5,400	1,640	5,180	1,110	1,850	920	356	700
12	f245	605	571	440	5,040	1,710	5,630	1,040	2,280	1,300	349	700
13	250	554	588	480	6,760	1,850	5,180	982	1,850	1,370	349	482
14	250	475	652	600	4,750	1,990	3,580	1,110	1,510	1,040	382	460
15	235	452	652	1,400	3,060	1,990	3,580	1,110	1,300	752	375	424
16	230	431	605	1,990	2,430	1,780	3,580	1,110	1,440	805	382	382
17	240	389	554	1,440	1,990	1,710	4,340	1,180	1,240	f982	362	389
18	225	389	605	1,100	1,990	2,430	6,320	1,110	982	805	323	356
19	256	389	700	880	2,140	15,600	8,250	982	1,380	700	424	342
20	235	375	811	870	2,580	12,200	20,400	2,980	3,460	605	438	336
21	250	389	1,900	860	2,430	8,000	17,000	3,580	1,990	537	403	330
22	250	362	1,710	820	1,990	6,090	11,400	2,430	1,580	554	389	323
23	240	362	1,180	780	1,850	4,340	7,760	1,990	1,300	700	349	316
24	240	349	900	740	1,710	3,400	5,860	1,850	1,300	1,040	342	336
25	268	349	700	700	1,510	2,900	4,540	1,850	1,440	1,300	342	389
26	349	336	620	660	1,440	2,430	3,580	2,140	1,300	1,180	445	562
27	792	349	520	630	1,370	2,430	3,060	6,680	1,240	1,240	862	605
28	1,710	336	560	610	1,440	4,720	2,430	4,340	1,660	1,240	1,180	475
29	1,850	342	550	580	1,440	8,250	2,280	3,060	3,580	862	982	382
30	1,060	336	590	560		21,900	1,990	2,580	3,230	1,370	982	342
31	652		560	540		45,700		3,760		920	920	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	13,585	1,850	225	438	-64.9	373	0.275	0.32
November	14,624	982	336	487	-58.1	429	.316	.35
December	20,469	1,900	323	660	+13.5	674	.496	.57
Calendar year								
January	21,900	1,990	440	706	-16.1	690	.508	.59
February	59,580	6,760	500	2,054	+108	2,162	1.59	1.71
March	188,590	45,700	1,300	6,084	+348	6,432	4.74	5.46
April	242,670	25,500	1,990	8,089	-38.0	8,051	5.93	6.62
May	62,874	6,680	982	2,028	-28.3	2,000	1.47	1.69
June	60,452	3,950	982	2,015	+20.2	2,035	1.50	1.67
July	37,876	3,580	537	1,222	-60.4	1,162	.856	.99
August	15,786	1,180	323	509	-117	392	.289	.33
September	13,562	700	316	452	-99.2	353	.260	.29
Water year 1939-40	751,968	45,700	225	2,055	+0.51	2,056	1.51	20.59

*Winter discharge measurement made on this day.
**Change in contents in Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, Mill Creek No. 2, Hinkston, Saltlick, and Laurel Run Reservoirs.
f Discharge computed on basis of relationship curve and gage readings at Bow Dam site.
Note.- Stage-discharge relation affected by ice Dec. 24 to Jan. 14, Jan. 18 to Feb. 10.

Kiskiminetas River at Vandergrift, Pa.

Location.- Water-stage recorder, lat. 40°36'20", long. 79°33'15", a third of a mile upstream from highway bridge at Vandergrift, Westmoreland County, two-thirds of a mile upstream from former site, and 2 miles upstream from Pine Run. Datum of gage is 769.40 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).
Drainage area.- 1,825 square miles.
Records available.- August 1937 to September 1940 in reports of U. S. Geological Survey; November 1915 to September 1940 in reports of Pennsylvania Department of Forests and Waters (prior to 1937, gage heights only).
Extremes.- Maximum discharge during year, 71,900 second-feet Mar. 31 (gage height, 25.70 feet); minimum, 263 second-feet Oct. 17 (gage height, 2.89 feet).
1915-40: Maximum discharge, 185,000 second-feet Mar. 18, 1936 (gage height, 41.64 feet, from floodmark at present site), by slope-area method; minimum not determined.
Remarks.- Records excellent except those for periods of ice effect, which are fair. Flow regulated by steel mills and several reservoirs upstream. The largest reservoirs, Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, Mill Creek No. 2, Hinkston, Saltlick, Laurel Run, and Trout Run, have a combined capacity of 2,108,300,000 cubic feet.
Cooperation.- Records of reservoir contents furnished by Bethlehem Steel Co., Johnstown Water Co., and Latrobe Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	367	730	380	630	*640	1,800	34,200	2,670	7,390	4,470	1,060	1,360
2	370	765	374	*550	620	2,480	16,800	2,740	6,780	5,010	862	1,060
3	394	849	405	560	610	5,000	11,800	2,740	5,140	3,600	760	910
4	486	648	464	610	600	11,400	25,400	2,460	4,020	2,810	695	714
5	486	570	642	640	610	10,600	16,800	2,270	3,190	2,270	630	624
6	402	540	648	610	700	7,180	10,400	2,090	2,600	1,910	722	552
7	364	588	594	590	800	5,470	7,600	1,910	2,210	1,600	1,330	490
8	337	624	570	580	1,400	4,300	7,260	1,850	1,970	1,400	840	515
9	319	815	630	570	1,950	3,550	15,500	1,790	2,430	1,290	647	662
10	295	1,240	716	550	3,100	2,920	11,600	1,850	3,520	1,200	580	797
11	292	966	702	530	8,100	2,340	8,440	1,650	2,810	1,270	525	1,300
12	288	800	765	520	9,290	2,090	8,230	1,500	2,910	2,000	495	1,130
13	288	695	765	560	7,230	2,210	7,810	1,440	2,530	2,150	465	854
14	281	612	821	800	6,400	2,550	6,380	1,490	2,030	1,530	450	702
15	277	564	950	3,490	4,480	2,840	5,580	1,550	1,790	1,150	450	596
16	271	525	835	3,150	3,390	2,550	5,390	1,530	1,910	1,130	520	530
17	271	486	800	1,710	2,920	2,150	6,180	1,550	1,910	1,390	480	490
18	275	463	814	1,320	2,770	3,150	8,380	1,510	1,540	1,250	440	480
19	281	454	886	1,100	2,700	17,700	11,800	1,390	1,900	1,030	475	455
20	285	441	1,030	1,000	3,630	16,200	30,000	2,860	4,830	934	547	425
21	288	421	2,100	980	3,880	10,200	25,000	5,390	2,880	830	552	416
22	290	421	2,410	960	3,230	7,760	16,100	3,430	2,090	740	480	394
23	288	425	1,680	930	2,480	6,120	11,300	2,670	1,790	734	445	380
24	279	425	1,320	900	2,210	4,660	8,440	2,530	1,660	1,510	407	368
25	295	425	1,000	850	2,210	3,960	6,580	2,530	1,790	1,350	394	578
26	352	409	840	810	1,920	3,230	5,390	2,880	1,740	1,650	510	747
27	625	394	730	780	1,750	3,070	4,380	10,100	1,670	1,550	914	747
28	1,700	374	780	750	1,800	5,040	3,680	7,400	1,990	1,400	1,490	708
29	2,520	384	720	720	1,970	9,880	3,190	4,830	4,650	1,840	1,370	558
30	1,460	384	770	690		20,800	2,880	3,680	4,830	1,790	1,170	450
31	930		710	660		60,400		8,490		1,370	1,320	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	15,656	2,520	271	505	-67.8	437	0.239	0.28
November	17,437	1,240	374	581	-61.2	520	.285	.32
December	26,851	2,410	374	866	+13.2	879	.482	.56
Calendar year 1939	859,045	24,800	253	2,354	- 1.96	2,352	1.29	17.51
January	29,100	3,490	520	939	-18.1	921	.505	.58
February	83,390	9,290	600	2,876	+118	2,994	1.64	1.77
March	243,600	60,400	1,800	7,858	+354	8,212	4.50	5.19
April	342,490	34,200	2,880	11,420	-38.0	11,380	6.24	6.96
May	92,770	10,100	1,390	2,993	-28.3	2,965	1.62	1.87
June	88,500	7,390	1,540	2,950	+20.2	2,970	1.63	1.82
July	54,158	5,010	734	1,747	-60.9	1,686	.924	1.07
August	22,025	1,490	394	710	-120	590	.323	.37
September	19,992	1,360	368	666	-100	566	.310	.35
Water year 1939-40	1,035,969	60,400	271	2,831	+0.81	2,832	1.55	21.14

Peak discharge.- Mar. 19 (4:30 p.m.) 26,300 second-feet; Mar. 31 (12 m.) 71,900 second-feet; Apr. 4 (2 p.m.) 32,600 second-feet; Apr. 9 (10:30 a.m.) 17,500 second-feet; Apr. 20 (6 p.m.) 36,400 second-feet; May 27 (12 m.) 15,000 second-feet.
*Winter discharge measurement made on this day.
**Change in contents in Quemahoning, North Fork of Bens Creek, Dalton Run, Mill Creek No. 1, Mill Creek No. 2, Hinkston, Saltlick, Laurel Run, and Trout Run Reservoirs.
Note.- Stage-discharge relation affected by ice Dec. 25 to Jan. 14, Jan. 19 to Feb. 11.

Little Conemaugh River at East Conemaugh, Pa.

Location.- Water-stage recorder, lat. 40°20'35", long. 78°53'05", at highway bridge at East Conemaugh, Cambria County, 0.3 mile downstream from Clapboard Run and 2.5 miles upstream from confluence with Stony Creek. Datum of gage is 1,207.92 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark). Prior to Feb. 1, 1940, chain gage at same site and datum.
Drainage area.- 183 square miles.
Records available.- April 1939 to September 1940.
Extremes.- Maximum discharge during year, 11,800 second-feet Mar. 30 (gage height, 8.80 feet), from rating curve extended above 5,100 second-feet by logarithmic plotting; minimum discharge observed, 6.8 second-feet Oct. 24.
1939-40: Maximum discharge, that of Mar. 30, 1940; minimum discharge observed, 3.6 second-feet Sept. 24, 1939.
Remarks.- Records good except those for period of ice effect and those for period of doubtful gage-height record, all of which are fair. Gage read twice daily prior to Feb. 1. Flow partly regulated by reservoirs and diversion works upstream. Water diverted at South Fork intake to Cambria plant of Bethlehem Steel Co., from Salt Lick and Laurel Run Reservoirs (combined capacity, 122,000,000 cubic feet) to city of Johnstown, and from Wilmore Reservoir (capacity, 137,000,000 cubic feet; average diversion, about 2.6 second-feet) to Pennsylvania Railroad.
Cooperation.- Records of diversion and change in reservoir contents furnished by Bethlehem Steel Co. and Johnstown Water Co. Results of four discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19.0	65	16.5	b35	28	116	3,140	268	380	408	35	78
2	23	50	16.0	b31	29	170	1,560	290	320	298	32	61
3	57	34	20	b27	28	311	1,390	255	251	222	30	57
4	29	21	40	b34	25	617	3,520	238	204	191	28	47
5	17.5	16.0	29	b31	26	573	1,520	220	172	158	28	41
6	15.5	d17	26	*b28	27	424	994	200	149	131	30	34
7	12.5	d20	20	b27	43	335	698	191	132	113	49	30
8	10.5	d35	32	b26	61	292	918	179	232	104	33	32
9	15.5	d52	35	b25	74	246	1,180	176	1,060	94	28	51
10	14.5	d47	39	b25	176	204	816	127	416	103	24	69
11	11.5	d45	45	b24	665	186	645	114	289	162	25	76
12	9.9	d39	43	b23	798	202	682	108	261	245	25	47
13	8.0	d35	49	b23	900	276	536	103	204	144	22	40
14	9.9	d32	47	100	566	242	480	112	159	96	82	34
15	10.5	29	57	380	375	232	439	104	154	79	48	31
16	9.5	26	35	221	318	200	492	129	192	102	27	30
17	9.5	25	51	170	282	205	434	110	132	98	26	27
18	10.5	22	68	106	292	741	677	100	148	73	30	25
19	9.5	21	59	97	271	2,700	783	102	606	59	56	23
20	8.7	22	92	89	251	1,460	2,730	595	485	55	40	20
21	8.0	21	242	77	213	1,020	1,860	400	287	49	28	22
22	7.6	19.5	166	68	170	848	1,250	308	230	62	23	19.0
23	7.3	22	114	61	162	609	898	264	202	48	21	20
24	6.8	18.5	57	55	152	510	698	238	219	138	22	21
25	9.5	15.5	44	49	155	399	562	268	194	115	20	33
26	22	14.5	100	44	127	336	462	250	151	68	98	50
27	37	13.0	72	40	130	335	395	230	141	71	262	27
28	124	13.5	83	36	141	1,150	335	192	201	52	203	21
29	108	13.0	81	35	121	1,690	295	160	386	70	143	18.5
30	57	14.0	64	32		5,600	277	149	306	49	87	17.5
31	71		46	28		6,440		299		42	72	

Month	Observed				Diversion and change in contents** (equivalent mean)	Adjusted		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	769.7	124	6.8	24.8	+32.1	56.9	0.311	0.36
November	817.5	65	13.0	27.2	+33.7	60.9	.333	.37
December	1,888.5	242	16.0	60.9	+38.8	99.7	.545	.63
Calendar year								
January	2,047	380	23	66.0	+35.6	102	.557	.64
February	6,606	900	25	228	+43.7	272	1.49	1.61
March	28,669	6,440	116	925	+56.4	981	5.36	6.18
April	30,666	3,520	277	1,022	+37.7	1,060	5.79	6.46
May	6,479	595	100	209	+39.2	248	1.36	1.57
June	8,263	1,060	132	275	+36.4	311	1.70	1.90
July	3,699	408	42	119	+37.2	156	.852	.98
August	1,677	262	20	54.1	+32.8	86.9	.475	.55
September	1,102.0	78	17.5	36.7	+29.9	66.6	.364	.41
Water year 1939-40	92,683.7	6,440	6.8	253	+37.2	290	1.58	21.66

Peak discharge.- Mar. 19 (3:30 a.m.) 3,540 sec.-ft.; Mar. 30 (11 p.m.) 11,800 sec.-ft.; Mar. 31 (9 p.m.) 5,910 sec.-ft.; Apr. 4 (3:30 a.m.) 5,580 sec.-ft.
*Winter discharge measurement made on this day.
**Diversion from and change in contents in Salt Lick and Laurel Run Reservoirs and diversion from South Fork intake.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of records for nearby stations.

Blacklick Creek at Blacklick, Pa.

Location.- Chain gage, lat. 40°28'25", long. 79°12'15", at highway bridge at Gratton, a quarter of a mile northwest of Blacklick, Indiana County, and three-quarters of a mile downstream from Two Lick Creek. Datum of gage is 945.94 feet above mean sea level (Pennsylvania State highway bench mark).
Drainage area.- 390 square miles.
Records available.- August 1904 to September 1913, October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1904 to December 1905, January 1907 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.- 33 years (1907-40), 667 second-feet.
Extremes.- Maximum discharge during year, 20,800 second-feet Mar. 31 (gage height, 11.5 feet, from graph based on gage readings); minimum discharge observed, 24 second-feet Oct. 21 (gage height, 2.50 feet).
1904-40: Maximum discharge, 51,700 second-feet Mar. 18, 1936 (gage height, 15.88 feet, from floodmark), by slope-area method; minimum discharge observed, 6 second-feet Sept. 12, 16-27, 1908 (gage height, 1.88 feet).
Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	105	45	118	119	296	5,120	421	935	1,360	116	110
2	59	95	53	121	116	402	2,760	514	1,080	848	90	87
3	61	87	63	126	113	980	1,960	480	805	615	78	90
4	42	78	100	120	112	2,850	3,860	440	622	487	68	68
5	37	92	130	*115	112	2,410	2,310	365	493	383	65	53
6	40	85	74	110	130	1,520	1,590	337	390	304	63	41
7	40	97	80	105	190	1,040	1,190	283	337	258	96	45
8	34	121	130	105	300	845	1,780	268	299	214	78	45
9	34	202	143	100	450	670	3,530	288	273	202	58	78
10	36	143	133	100	883	524	2,030	273	268	190	58	110
11	32	119	155	98	1,860	490	1,530	254	415	250	74	110
12	30	92	146	105	1,440	350	1,900	236	587	616	90	81
13	33	100	143	120	1,630	484	1,530	227	325	299	51	58
14	32	78	210	150	1,080	471	1,240	245	254	206	53	47
15	30	78	169	891	1,060	484	1,080	263	324	167	49	53
16	30	69	172	545	630	453	1,030	263	360	245	66	45
17	32	69	166	410	490	453	890	268	236	227	48	47
18	28	67	198	290	564	1,080	2,300	245	222	160	47	43
19	29	57	162	210	517	6,850	2,600	245	814	142	63	49
20	28	53	361	195	601	3,280	6,760	1,480	852	120	63	41
21	24	55	676	190	557	2,030	4,620	1,020	460	107	55	45
22	34	57	438	180	394	1,650	3,220	677	360	81	49	43
23	36	55	296	170	411	1,190	2,030	514	294	126	45	37
24	40	61	195	160	371	980	1,530	466	320	202	45	47
25	39	47	145	*155	388	765	1,190	585	354	498	47	82
26	61	37	155	145	272	578	935	862	421	222	128	116
27	144	57	135	140	255	669	765	3,140	325	300	149	78
28	486	61	145	135	319	2,150	615	1,530	752	202	139	55
29	256	53	125	130	305	2,680	528	980	1,410	167	110	73
30	146	45	122	125		8,230	473	805	980	156	78	47
31	105		119	120		12,600		1,300		136	146	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	2,119	486	24	68.4	0.175	0.20
November	2,405	202	37	80.2	.206	.23
December	5,384	676	45	174	.446	.51
Calendar year 1939	180,030	5,950	23	493	1.26	17.16
January	5,784	891	98	187	.479	.55
February	15,669	1,860	112	540	1.38	1.49
March	59,454	12,600	296	1,918	4.92	5.67
April	62,896	6,760	473	2,097	5.38	6.00
May	19,274	3,140	227	622	1.59	1.83
June	15,567	1,410	222	519	1.33	1.48
July	9,490	1,360	81	306	.785	.91
August	2,365	149	45	76.3	.196	.23
September	1,924	116	37	64.1	.164	.18
Water year 1939-40	202,331	12,600	24	553	1.42	19.28

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 4-6, Dec. 24 to Jan. 14, Jan. 17 to Feb. 9.

Loyalhanna Creek at Kingston, Pa.

Location.- Water-stage recorder, lat. 40°17'35", long. 79°20'25", 60 feet downstream from highway bridge at Kingston, Westmoreland County, 1.9 miles upstream from Nine-mile Run, and 3 miles southeast of Latrobe. Datum of gage is 1,014.16 feet above mean sea level (general adjustment of 1929, Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 168 square miles.

Records available.- December 1939 to September 1940.

Extremes.- Maximum discharge during period, 9,170 second-feet Mar. 30 (gage height, 9.83 feet), from rating curve extended above 4,000 second-feet; minimum, 9.1 second-feet Aug. 16 (gage height, 1.12 feet).
Maximum stage known, about 14.5 feet, from information by local residents, in March 1936 (discharge not determined).

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by storage in Trout Run Reservoir (capacity, 48,130,000 cubic feet). Water diverted from reservoir to borough of Latrobe.

Cooperation.- Records of diversion and reservoir contents furnished by Latrobe Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				53	37	211	2,080	193	970	637	39	90
2				47	*36	363	1,090	198	798	391	31	46
3				43	36	1,140	1,100	170	520	274	25	31
4				40	36	1,520	3,230	156	370	220	22	25
5				38	39	1,060	1,300	132	283	170	19	21
6				36	50	690	774	115	232	139	24	17
7				35	76	492	538	108	188	113	39	15
8				*33	185	385	964	98	158	100	24	53
9				32	370	310	1,420	113	151	85	19	148
10				31	920	252	864	100	153	78	17	282
11				31	2,000	213	635	92	170	165	15	205
12				32	876	198	756	90	146	262	13	106
13				39	762	217	585	87	142	130	12	66
14				70	605	232	524	90	106	87	11	45
15				632	416	249	474	87	106	71	10	35
16			87	257	319	226	776	98	271	199	10	29
17			89	185	272	251	660	87	144	117	10	26
18			79	100	293	658	1,140	81	186	87	11	23
19			67	82	372	2,230	1,480	74	371	66	21	21
20			188	74	551	1,140	3,380	747	211	52	26	19
21			258	72	492	744	1,900	374	156	45	17	17
22			173	68	362	580	1,230	271	132	42	14	16
23			135	63	280	425	840	229	119	59	11	13
24			112	56	243	327	620	293	121	62	11	13
25			108	51	255	270	479	290	106	71	10	78
26			110	48	189	239	378	633	102	52	20	78
27			108	44	171	237	310	2,780	110	68	136	31
28			*100	42	215	708	258	1,030	186	67	113	23
29			92	40	188	804	223	596	296	68	49	19
30			76	39		3,660	198	521	274	56	34	18
31			62	37		4,840		1,600		56	86	

Month	Observed				Diversion and change in contents** (equivalent mean)	Adjusted		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October.....								
November.....								
December 16-31	1,844	258	62	115				
Calendar year								
January.....	2,450	632	31	79.0	+1.79	80.8	0.481	0.55
February.....	10,646	2,000	36	367	+13.7	381	2.27	2.45
March.....	24,871	4,840	198	802	+10.0	812	4.83	5.57
April.....	30,206	3,380	198	1,007	+3.34	1,010	6.01	6.71
May.....	11,533	2,780	74	372	+3.38	375	2.23	2.57
June.....	7,278	970	102	243	+3.48	246	1.46	1.63
July.....	4,089	637	42	132	+3.07	135	.804	.93
August.....	899	136	10	29.0	+1.44	30.4	.181	.21
September.....	1,609	282	13	53.6	+2.60	56.2	.335	.37
Water year								

Peak discharge.- Mar. 30 (11:30 p.m.) 9,170 sec.-ft.; Apr. 4 (3:30 a.m.) 5,550 sec.-ft.; Apr. 20 (7 a.m.) 4,330 sec.-ft.; May 27 (2 a.m.) 5,230 sec.-ft.
*Winter discharge measurement made on this day.
**Diversion from and change in contents in Trout Run Reservoir.
Note.- Stage-discharge relation affected by ice Dec. 25 to Jan. 14, Jan. 17 to Feb. 10.

Loyalhanna Creek at New Alexandria, Pa.

Location.- Wire-weight gage, lat. 40°23'40", long. 79°25'55", at highway bridge at New Alexandria, Westmoreland County, 1 3/4 miles downstream from Crabtree Creek. Datum of gage is 917.26 feet above mean sea level (general adjustment of 1912).
Drainage area.- 265 square miles.
Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1913 to July 1923, November 1925 to September 1940 in reports of Pennsylvania Department of Forests and Waters (discontinued).
Average discharge.- 17 years (1919-22, 1926-40), 442 second-feet (adjusted 1940 water year only).
Extremes.- Maximum discharge during year, 11,400 second-feet Mar. 31 (gage height, 12.9 feet, from graph based on gage readings), from rating curve extended above 3,000 second-feet on basis of slope-area and contracted-opening determinations at gage height, 20.96 feet; minimum discharge observed, 15 second-feet Aug. 11; minimum daily discharge, 18 second-feet Oct. 11-13.
1913-23, 1925-40: Maximum discharge, 31,000 second-feet Mar. 18, 1936 (gage height, 20.96 feet, from floodmark), by slope-area and contracted-opening methods; minimum discharge observed, 2.4 second-feet Oct. 3, 1927 (gage height, 1.46 feet).
Remarks.- Records fair. Gage read twice daily. Flow regulated at low stages by power plants, mine pumpage, and Trout Run Reservoir (capacity, 48,130,000 cubic feet).
Cooperation.- Records of reservoir contents furnished by Latrobe Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	71	51	88	55	282	2,860	333	1,630	768	105	216
2	23	82	58	81	54	314	1,600	347	1,300	560	67	113
3	27	60	58	75	53	1,410	1,830	324	870	431	67	86
4	29	46	94	70	53	2,000	5,200	292	642	338	60	58
5	26	67	98	66	58	1,550	1,750	255	481	273	54	47
6	26	71	93	*64	75	1,020	1,160	238	406	220	58	45
7	20	82	93	62	115	700	840	224	338	168	120	43
8	26	82	104	61	185	550	1,320	211	282	160	86	73
9	23	98	129	60	390	460	2,020	216	255	143	67	180
10	22	82	114	59	990	378	1,240	202	229	120	54	194
11	18	74	117	58	2,580	350	1,030	164	305	160	25	292
12	18	62	117	59	1,650	330	1,240	176	242	536	45	151
13	18	53	110	66	1,020	320	1,030	185	211	269	42	120
14	19	62	161	100	885	378	840	168	194	180	38	89
15	26	62	143	875	610	378	752	180	168	139	35	70
16	23	58	133	449	432	330	1,030	172	385	338	49	63
17	22	51	117	236	305	522	965	168	233	202	30	63
18	28	49	129	160	432	890	1,630	160	222	147	42	54
19	28	56	120	120	478	2,790	1,910	166	639	116	47	49
20	28	53	114	100	820	1,490	5,080	660	310	102	58	49
21	28	56	570	95	640	965	2,700	533	229	82	47	49
22	26	53	536	92	580	752	1,740	381	194	82	35	45
23	27	67	151	86	490	560	1,240	338	176	254	36	45
24	28	60	165	82	460	431	965	406	202	175	35	35
25	32	53	165	*74	405	347	725	406	207	116	42	27
26	56	58	158	69	260	315	615	1,000	194	105	49	88
27	156	53	133	66	275	431	506	3,490	194	194	120	42
28	378	53	124	63	320	810	456	1,460	264	332	120	35
29	158	49	115	60	300	1,160	381	840	588	247	95	35
30	87	53	105	58		3,900	356	719	431	164	65	40
31	71		96	56		8,330		2,670		139	322	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October.....	1,517	378	18	48.9	-2.99	45.9	0.173	0.20
November.....	1,876	98	46	62.5	-3.09	59.4	.224	.25
December.....	4,471	570	51	144	-0.25	144	.543	.63
Calendar year 1939	119,010	4,380	15	326			n1.23	n16.69
January.....	3,710	875	56	120	-2.00	118	.445	.51
February.....	14,970	2,580	53	516	+9.87	526	1.98	2.14
March.....	34,443	8,330	282	1,111	+6.49	1,117	4.22	4.87
April.....	45,011	5,200	356	1,500	0	1,500	5.66	6.31
May.....	17,084	3,490	160	551	0	551	2.08	2.40
June.....	12,021	1,630	168	401	0	401	1.51	1.68
July.....	7,260	768	82	234	-0.50	234	.883	1.02
August.....	2,115	322	25	68.2	-2.50	65.7	.248	.29
September.....	2,496	292	27	83.2	-1.03	82.2	.310	.35
Water year 1939-40	146,974	8,330	18	402	+0.30	402	1.52	20.65

*Winter discharge measurement made on this day.
**Change in contents in Trout Run Reservoir.
n Unadjusted.
Note.- Stage-discharge relation affected by ice Dec. 28 to Jan. 14, Jan. 18 to Feb. 10. Discharge for period of backwater from leaves, Oct. 2-27, computed on basis of gage heights and one discharge measurement.

Loyalhanna Creek at Loyalhanna Creek Dam, Pa.

Location.- Water-stage recorder, lat. 40°27'50", long. 79°27'05", at highway bridge 1 mile downstream from Loyalhanna Creek Dam, Westmoreland County, 2 miles south of Saltsburg, and 3.8 miles upstream from mouth. Datum of gage is 861.15 feet above mean sea level (general adjustment of 1929; Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 292 square miles.

Records available.- March to September 1940.

Extremes.- Maximum discharge during period, 10,700 second-feet Mar. 31 (gage height, 9.90 feet); minimum, 43 second-feet Aug. 25 (gage height, 0.60 foot); minimum daily, 48 second-feet Aug. 25.

Remarks.- Records good except those for periods of partial or no gage-height record, which are fair. Some regulation from mine pumpage and storage in Trout Run Reservoir (capacity, 48,130,000 cubic feet).

Cooperation.- Records of reservoir contents furnished by Latrobe Water Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							3,850	373	f1,960	752	128	a215
2							2,200	394	f1,520	774	102	a150
3							1,870	352	f1,040	500	84	a105
4							5,350	332	f756	382	71	a80
5							2,330	297	572	301	71	a60
6							f1,140	268	450	243	93	a52
7							f1,070	257	377	202	258	a56
8							1,320	236	316	176	104	a120
9							2,760	239	312	164	79	a200
10							1,700	232	264	148	70	a245
11							1,240	209	301	172	61	410
12							1,380	196	260	570	56	196
13							1,170	186	229	293	56	134
14							1,040	186	212	189	56	106
15							938	186	199	145	53	88
16							1,140	189	341	189	52	73
17							1,170	186	285	248	52	71
18							1,830	173	219	160	50	66
19							2,290	164	553	134	59	a61
20							5,930	764	442	114	66	a58
21						1,280	3,360	679	278	94	61	a54
22						970	2,140	436	229	92	53	a52
23						720	1,520	340	202	164	51	a51
24						550	1,170	417	209	261	50	a50
25						450	905	422	219	131	48	a80
26						348	732	445	189	134	58	a150
27						399	600	3,210	209	238	124	a100
28						809	500	f1,670	393	337	212	70
29						1,170	436	f970	702	385	a120	53
30						3,460	394	f888	540	234	a96	50
31						8,120		f3,190		164	a390	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October								
November								
December								
Calendar year								
January								
February								
March 21-31	18,276	8,120	348	1,661				
April	53,475	5,930	394	1,782	0	1,782	6.10	6.81
May	18,086	3,210	164	583	0	583	2.00	2.31
June	13,778	1,960	189	459	0	459	1.57	1.75
July	8,090	774	92	261	-0.50	260	.890	1.03
August	2,884	390	48	93.0	-2.50	90.5	.310	.36
September	3,256	410	50	109	-1.03	108	.370	.41
Water year								

Peak discharge.- Mar. 31 (7:30 a.m.) 10,700 sec.-ft.; Apr. 4 (10 a.m.) 7,400 sec.-ft.; Apr. 20 (11:30 a.m.) 7,000 sec.-ft.

a No gage-height record; discharge computed on basis of one discharge measurement and records for other stations in Kiskiminetas River Basin.

f Discharge based on partial gage-height record.

**Change in contents in Trout Run Reservoir.

Monongahela River at Greensboro, Pa.

Location.- Water-stage recorder, lat. 39°47'15", long. 79°55'15", 750 feet upstream from dam at lock 7, at Greensboro, Greene County, 2.2 miles downstream from Dunkard Creek, and 4.3 miles downstream from Cheat River. Datum of gage is 767.55 feet above mean sea level (general adjustment of 1912).

Drainage area.- 4,407 square miles.

Records available.- January 1939 to September 1940.

Extremes.- Maximum discharge during year, 79,400 second-feet May 31 (gage height, 20.30 feet); minimum, 386 second-feet Jan. 7 (gage height, 10.79 feet); minimum daily, 432 second-feet Jan. 7.

1939-40: Maximum discharge, 125,000 second-feet Feb. 4, 1939 (gage height, 25.72 feet), from rating curve extended above 75,000 second-feet; minimum, 342 second-feet May 28, 1939 (gage height, 10.72 feet); minimum daily, that of Jan. 7, 1940.

Flood of Mar. 18, 1936, reached a stage of 28.4 feet (discharge not determined).

Remarks.- Records good except those for periods of faulty gage-height record and those below 5,000 second-feet, all of which are fair. Flow regulated by Tygart and Lake Lynn Reservoirs (combined capacity, 351,338 acre-feet).

Cooperation.- Record of Tygart Reservoir contents furnished by Corps of Engineers, U. S. Army. Record of Lake Lynn Reservoir contents furnished by West Penn Power Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,050	2,510	1,820	820	1,200	15,600	35,800	5,170	38,000	29,200	2,080	4,400
2	1,180	2,530	690	1,030	1,180	15,200	23,500	4,580	24,400	22,200	2,240	3,800
3	2,020	3,240	722	1,100	1,230	19,100	18,900	4,060	19,600	15,800	1,260	2,700
4	1,700	1,560	1,870	625	720	38,500	21,300	3,630	14,400	9,060	1,120	3,200
5	1,690	1,090	2,570	640	890	38,800	17,200	1,960	9,620	11,200	1,040	2,200
6	1,420	1,500	2,850	512	4,980	27,000	11,800	3,330	9,000	8,600	1,620	2,500
7	686	1,760	2,680	432	10,400	21,600	4,940	3,670	7,000	4,940	835	1,800
8	632	1,970	3,920	551	20,000	18,300	9,300	3,420	4,820	3,170	780	1,250
9	614	3,040	4,870	1,160	16,200	11,000	18,200	3,170	5,950	3,320	1,520	1,800
10	1,510	3,820	2,550	536	15,000	5,720	14,900	3,700	7,520	2,520	760	1,800
11	632	1,600	3,370	2,000	43,100	4,380	13,400	1,560	6,750	2,110	704	1,840
12	544	1,430	3,800	1,970	31,800	5,430	14,500	1,200	8,390	2,560	722	1,900
13	596	2,610	4,830	1,000	26,200	4,760	13,700	2,470	13,200	2,140	1,440	1,860
14	686	1,790	5,360	3,290	32,500	5,980	7,940	2,540	13,800	1,510	740	1,190
15	760	1,700	5,230	17,600	30,600	8,720	11,100	3,640	7,440	1,840	704	880
16	740	1,780	3,460	13,600	24,400	7,410	31,000	4,490	6,540	1,840	704	1,240
17	1,560	1,660	3,240	9,990	20,000	6,470	52,000	4,220	6,180	1,520	596	1,580
18	780	840	5,270	6,530	17,500	10,800	49,900	1,420	10,200	2,260	578	981
19	760	1,040	6,230	3,500	15,500	17,000	51,000	1,160	26,200	3,260	725	840
20	740	2,220	7,530	2,200	28,000	22,100	67,800	7,560	23,600	1,780	1,530	1,260
21	760	1,310	10,700	1,900	26,000	19,700	52,700	13,100	17,900	1,240	1,320	776
22	820	2,040	12,200	2,350	18,000	15,800	35,500	11,000	9,740	1,480	632	578
23	820	830	8,770	2,450	13,000	8,830	28,900	7,900	5,220	1,980	560	800
24	1,620	1,910	5,840	2,900	8,600	4,730	26,200	8,460	4,800	4,930	520	1,530
25	632	1,400	3,570	2,800	5,760	5,930	22,100	20,500	5,450	8,870	900	6,720
26	596	880	3,340	2,100	6,180	4,420	15,400	27,000	5,380	7,910	1,600	17,300
27	1,650	1,390	4,150	1,300	6,350	5,290	10,700	20,800	3,860	5,000	5,000	12,200
28	7,690	1,880	2,960	800	8,520	5,610	6,080	19,600	5,920	2,790	14,000	8,010
29	9,230	1,010	3,610	590	15,300	5,990	5,160	15,200	5,340	2,300	11,000	2,860
30	5,150	725	1,300	620		11,100	4,700	10,700	4,460	2,710	7,400	2,630
31	3,290		940	660		46,600		60,000		2,500	4,500	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	52,558	9,230	544	1,695	-265	1,430	0.324	0.37
November	53,065	3,920	725	1,769	-316	1,453	.330	.37
December	130,242	12,200	690	4,201	-431	3,770	.855	.99
Calendar year 1939	2,863,485	93,000	544	7,845			n1.78	n23.93
January	87,556	17,600	432	2,824	+104	2,928	.664	.77
February	449,110	43,100	720	15,490	-23.5	15,470	3.51	3.80
March	437,870	46,600	4,380	14,120	+403	14,520	3.29	3.79
April	695,420	67,800	4,700	23,180	+805	23,980	5.44	6.07
May	281,210	60,000	1,160	9,071	+1,048	10,120	2.30	2.65
June	331,180	38,000	3,960	11,040	-535	10,500	2.38	2.66
July	172,540	29,200	1,240	5,566	-81.0	5,495	1.24	1.43
August	69,130	14,000	520	2,230	-358	1,972	.425	.49
September	92,425	17,300	578	3,081	+83.4	3,164	.718	.80
Water year 1939-40	2,852,306	67,800	432	7,793	+36.9	7,830	1.78	24.19

Peak discharge.- Feb. 11 (4 p.m.) 56,300 sec.-ft.; Mar. 4 (5 p.m.) 50,300 sec.-ft.; Mar. 31 (3 p.m.) 55,100 sec.-ft.; Apr. 17 (5:30 p.m.) 60,200 sec.-ft.; May 31 (1 p.m.) 79,400 sec.-ft.; July 1 (6:30 p.m.) 43,100 sec.-ft.

**Change in contents in Tygart and Lake Lynn Reservoirs.

n Adjusted for period Oct. 1 to Dec. 31 only.

Note.- Discharge for periods of faulty gage-height record, Jan. 20 to Feb. 5, Feb. 17-24, Aug. 24 to Sept. 10, computed on basis of gage readings at lock 7 and records for station at Charleroi.

Monongahela River at Charleroi, Pa.

Location.- Water-stage recorder, lat. 40°08'30", long. 79°53'35", 1,100 feet upstream from dam at lock 4, at Charleroi, Washington County, and half a mile downstream from Maple Creek. Datum of gage is 735.33 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).
Drainage area.- 5,213 square miles.
Records available.- March 1886 to March 1905 (high-water records only), October 1933 to September 1940 in reports of U. S. Geological Survey; October 1933 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Extremes.- Maximum discharge during year, 93,600 second-feet Apr. 20 (gage height, 15.06 feet); minimum, 560 second-feet Jan. 29 (gage height, 2.37 feet, affected by ice); minimum daily, 636 second-feet Oct. 14.
1886-1905, 1933-40: Maximum discharge, about 156,000 second-feet July 11, 1888 (gage height, 42.0 feet on lower gage at old lock downstream, or about 26.1 feet on present gage); minimum not determined.
Remarks.- Records good except those below 5,000 second-feet, which are fair. Flow regulated by locks upstream and by Lake Lynn and Tygart Reservoirs (combined capacity 351,338 acre-feet).
Cooperation.- Record of Tygart Reservoir contents and results of one discharge measurement furnished by Corps of Engineers, U. S. Army. Record of contents of Lake Lynn Reservoir furnished by West Penn Power Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	c1,140	3,020	1,100	1,320	b1,130	16,400	45,200	5,250	52,900	24,900	2,380	4,760
2	c1,200	2,630	1,570	1,300	b1,300	17,200	27,200	5,460	29,700	32,200	2,220	4,400
3	c1,600	2,930	996	1,360	b1,280	23,200	21,000	4,220	21,700	16,800	1,950	3,200
4	c2,010	2,960	1,160	1,340	b1,300	41,000	28,000	4,150	16,900	12,200	1,360	3,110
5	c1,960	1,880	1,900	1,070	b950	47,200	20,300	3,690	11,300	9,580	1,220	2,430
6	c1,880	1,490	2,630	996	1,780	32,400	14,500	2,780	9,620	10,500	1,350	2,380
7	c1,440	1,660	2,600	928	7,060	24,000	9,450	4,000	8,050	6,840	1,860	2,030
8	c944	1,800	2,840	758	17,800	19,600	7,270	3,760	6,120	4,110	1,140	1,450
9	c800	2,030	3,970	992	17,500	14,200	19,600	3,590	6,140	3,330	1,040	1,450
10	c949	3,260	3,740	1,300	14,800	8,520	17,800	3,230	7,300	3,420	1,360	1,930
11	c1,260	3,120	2,690	1,130	37,900	5,210	15,400	3,200	7,550	2,660	928	1,980
12	c880	1,700	3,230	2,380	40,200	4,760	15,800	1,850	7,300	3,140	848	1,980
13	c674	1,660	3,920	2,130	27,200	5,640	16,400	1,880	11,600	2,870	914	1,960
14	c636	2,190	5,080	2,890	29,700	5,210	12,200	3,020	14,500	2,350	1,340	2,010
15	c674	1,680	5,040	13,900	34,200	8,800	10,100	3,140	9,850	1,850	897	1,280
16	c864	1,610	4,800	16,400	26,400	8,300	26,400	4,150	7,300	2,220	800	1,140
17	c991	1,610	3,360	11,600	21,700	8,050	47,500	4,240	6,760	2,060	758	1,450
18	c1,320	1,500	3,870	8,320	19,200	10,300	56,300	3,540	6,600	2,010	772	1,700
19	c928	978	5,730	4,900	16,600	17,800	51,400	1,780	22,400	2,720	800	1,200
20	c816	1,150	6,770	2,660	33,300	22,400	87,400	3,830	26,400	2,920	950	1,090
21	c816	1,880	8,990	2,540	29,700	21,000	67,800	12,000	19,600	1,750	1,340	1,300
22	c772	1,470	12,200	2,660	21,700	17,500	45,300	11,600	13,200	1,470	1,260	961
23	c772	1,700	9,820	2,870	15,800	11,600	31,500	8,800	6,920	1,930	880	816
24	c966	1,160	8,430	2,900	10,400	6,990	28,000	8,300	5,290	3,340	758	1,070
25	1,320	1,750	4,900	3,170	8,300	5,290	24,000	15,300	5,510	9,220	674	2,650
26	1,010	1,380	3,490	3,120	6,520	5,640	17,200	27,200	6,180	7,140	1,410	13,400
27	965	1,100	3,780	2,050	6,800	5,080	12,800	21,700	5,380	6,610	4,360	13,800
28	4,020	1,600	4,080	1,100	7,820	5,950	8,550	19,600	4,880	3,900	13,500	8,600
29	9,080	1,600	3,420	b680	13,800	6,560	5,550	16,800	6,800	2,430	15,100	5,720
30	6,660	1,080	3,380	b700		10,600	5,210	10,900	5,000	2,750	8,550	2,570
31	4,100		1,650	b750		49,900		59,500		2,490	5,530	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	53,447	9,080	636	1,724	-265	1,459	0.280	0.32
November	55,578	3,260	978	1,853	-316	1,537	.295	.33
December	131,136	12,200	996	4,230	-431	3,799	.729	.84
Calendar year 1939	3,184,425	109,000	636	8,724			n1.67	n22.73
January	100,214	16,400	680	3,233	+104	3,337	.640	.74
February	472,140	40,200	950	16,280	-23.5	16,260	3.12	3.36
March	486,300	49,900	4,760	15,690	+403	16,090	3.09	3.56
April	795,130	87,400	5,210	26,500	+805	27,300	5.24	5.85
May	282,460	59,500	1,780	9,112	+1,048	10,160	1.95	2.25
June	368,650	52,900	4,880	12,290	-535	11,760	2.26	2.52
July	191,710	32,200	1,470	6,184	-81.0	6,103	1.17	1.35
August	78,249	15,100	674	2,524	-358	2,166	.415	.48
September	93,817	13,800	816	3,127	+83.4	3,210	.616	.69
Water year 1939-40	3,108,831	87,400	636	8,494	+36.9	8,531	1.64	22.29

**Change in contents in Tygart and Lake Lynn Reservoirs.
b Stage-discharge relation affected by ice.
c Backwater from flashboards; discharge computed on basis of one discharge measurement, gage heights, and records for stations at Greensboro and Braddock.
n Adjusted for period Oct. 1 to Dec. 31 only.

Monongahela River at Braddock, Pa.

Location.- Water-stage recorder, lat. 40°23'25", long. 79°51'20", 1,000 feet upstream from dam at lock 2, at Braddock, Allegheny County, 1,000 feet downstream from Turtle Creek, and 11.2 miles upstream from confluence with Allegheny River. Datum of gage is 706.97 feet above mean sea level (general adjustment).
Drainage area.- 7,337 square miles.
Records available.- January 1939 to September 1940.
Extremes.- Maximum discharge during year, 115,000 second-feet Apr. 20 (gage height, 23.86 feet); minimum, 627 second-feet Oct. 14; minimum daily, 735 second-feet Oct. 14.
1939-40: Maximum discharge, 147,000 second-feet Feb. 4, 1939 (gage height, 27.2 feet), from rating curve extended above 100,000 second-feet; minimum, that of Oct. 14, 1939.
Maximum stage known, 38.8 feet Mar. 18, 1936 (discharge not determined).
Remarks.- Records good except those below 5,000 second-feet and those for period of doubtful gage-height record, all of which are fair. Flow regulated by locks upstream and by Tygart, Lake Lynn, and Deep Creek Reservoirs (combined capacity, 457,399 acre-feet).
Cooperation.- Results of three discharge measurements and record of Tygart Reservoir contents furnished by Corps of Engineers, U. S. Army. Records of contents of Deep Creek and Lake Lynn Reservoirs furnished by Pennsylvania Electric Co. and West Penn Power Co. respectively.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,460	4,360	1,880	2,740	2,640	20,000	75,300	9,050	73,500	21,300	3,830	8,500
2	1,610	3,640	2,290	2,350	2,250	21,200	45,600	9,600	42,400	48,900	3,990	7,700
3	1,760	3,750	2,220	2,160	2,200	29,800	33,400	8,500	30,700	28,000	3,560	6,150
4	2,350	3,910	1,790	2,130	2,150	47,800	50,600	8,220	23,600	20,400	2,840	4,790
5	2,610	2,980	2,450	2,220	2,100	63,300	41,400	7,450	18,000	13,800	2,030	3,990
6	2,610	2,480	3,150	2,130	9,400	46,700	28,000	6,450	13,400	15,200	1,740	3,670
7	2,450	2,480	3,600	2,060	14,800	34,400	20,400	6,650	12,400	12,000	3,050	3,230
8	1,880	2,910	3,710	1,910	14,800	28,000	15,300	7,700	10,200	8,220	3,190	3,300
9	1,460	3,080	4,920	1,790	14,500	22,800	30,300	7,450	9,050	6,700	2,410	5,710
10	834	d3,500	6,100	2,060	13,800	15,200	31,600	6,850	10,500	6,900	2,320	5,950
11	969	d3,700	4,440	1,970	29,400	10,500	25,300	6,550	12,400	5,850	2,000	6,350
12	1,290	d3,000	4,660	2,740	59,100	8,500	24,400	4,920	13,800	6,450	1,520	4,970
13	926	2,670	5,190	3,330	40,400	9,050	26,200	4,230	18,800	6,250	1,290	4,110
14	735	2,980	6,400	3,190	38,400	9,320	22,000	5,150	19,600	5,010	1,520	3,950
15	816	d2,400	6,950	10,800	41,400	12,000	17,200	5,350	16,000	3,870	1,640	3,150
16	898	d2,200	6,750	20,400	32,500	13,800	27,700	6,700	13,000	3,830	1,320	2,380
17	1,070	d2,150	5,150	16,400	27,100	12,400	54,400	7,450	11,400	4,070	1,290	2,290
18	1,430	d2,000	4,970	11,000	24,400	13,400	71,100	6,900	9,600	3,990	1,290	2,570
19	1,460	d1,600	6,950	6,900	22,000	29,000	65,600	4,690	20,400	3,950	1,460	2,510
20	1,320	1,820	8,220	4,360	36,000	40,400	105,000	4,880	34,400	4,660	1,400	2,160
21	1,260	2,350	10,500	3,260	38,400	34,400	97,500	15,400	27,100	3,750	2,000	2,090
22	1,120	d2,100	14,100	3,080	29,800	28,000	68,000	16,800	20,000	3,010	2,060	2,060
23	1,090	d1,900	13,800	3,370	22,800	21,200	45,600	13,000	12,700	3,010	1,850	1,670
24	1,090	d2,100	11,100	2,770	16,800	14,500	38,400	12,400	9,320	4,420	1,520	1,640
25	1,460	d1,900	7,200	2,910	13,800	10,500	32,500	17,200	9,050	9,130	1,290	2,580
26	1,880	2,350	4,920	2,910	11,400	10,500	26,200	30,700	9,900	9,600	1,730	12,400
27	2,060	2,160	4,530	2,320	10,500	9,600	20,400	31,600	9,600	9,600	6,000	19,600
28	3,150	2,090	5,010	2,090	11,100	10,800	15,600	28,000	8,500	6,950	22,500	13,000
29	11,000	2,510	4,440	2,380	15,100	13,000	10,800	23,600	11,400	5,080	22,000	8,880
30	10,500	2,320	5,330	2,700		20,800	9,600	18,100	11,100	4,150	14,800	4,750
31	6,420		4,030	2,870		78,000		62,600		3,830	10,500	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	70,968	11,000	735	2,289	-340	1,949	0.266	0.31
November	79,390	4,360	1,600	2,646	-429	2,217	.302	.34
December	176,750	14,100	1,790	5,702	-460	5,242	.714	.82
Calendar year 1939	4,214,582	133,000	735	11,550			n1.57	n21.36
January	133,300	20,400	1,790	4,300	+167	4,467	.609	.70
February	599,040	59,100	2,100	20,660	-15.9	20,640	2.81	3.03
March	738,870	78,000	8,500	23,830	+641	24,470	3.34	3.85
April	1,175,400	105,000	9,600	39,180	+1,170	40,350	5.50	6.14
May	404,640	62,600	4,230	13,050	+1,050	14,100	1.92	2.21
June	541,820	73,500	8,500	18,060	-414	17,650	2.41	2.69
July	291,880	48,900	3,010	9,415	-123	9,292	1.27	1.46
August	129,940	22,500	1,290	4,192	-462	3,730	.508	.59
September	156,100	19,600	1,640	5,203	-0.1	5,203	.709	.79
Water year 1939-40	4,498,098	105,000	735	12,290	+65.1	12,360	1.68	22.93

Peak discharge.- Mar. 31 (9 p.m.) 92,300 sec.-ft.; Apr. 18 (1 p.m.) 73,500 sec.-ft.; Apr. 20 (7 p.m.) 115,000 sec.-ft.; May 31 (11 p.m.) 91,000 sec.-ft.
**Change in contents in Deep Creek, Lake Lynn, and Tygart Reservoirs.
d Doubtful gage-height record; discharge computed on basis of gage heights and records for station at Charleroi.
k Abnormal manipulation at lock; discharge computed on basis of records for stations upstream.
n Adjusted for period Oct. 1 to Dec. 31 only.

South Fork of Tenmile Creek at Jefferson, Pa.

Location.- Water-stage recorder and masonry control, lat. 39°55'25", long. 80°04'25", at highway bridge 1 mile southwest of Jefferson, Greene County, and 3¼ miles downstream from Ruff Creek. Datum of gage is 852.54 feet above mean sea level (general adjustment of 1907).

Drainage area.- 180 square miles.

Records available.- October 1931 to September 1940.

Extremes.- Maximum discharge during year, 5,450 second-feet Apr. 20, from rating curve extended above 3,700 second-feet; maximum gage height, 10.41 feet Mar. 4; minimum discharge, 0.31 second-foot Oct. 15-17 (gage height, 0.49 foot).

1931-40: Maximum discharge, 8,100 second-feet Nov. 4, 1936 (gage height, 13.8 feet, from graph based on gage readings), from rating curve extended above 4,000 second-feet; minimum discharge observed, about 0.05 second-foot Sept. 3, 1938 (gage height, 0.36 foot).

Remarks.- Records good except those for periods of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.84	17.6	5.4	16.8	12	518	930	102	709	3,640	16.4	734
2	.79	14.4	5.4	15.6	13	1,000	525	116	372	806	18.0	658
3	1.00	10.9	5.7	13.3	13	2,550	533	95	209	339	14.0	162
4	1.30	8.6	7.0	14.4	13	3,100	1,600	88	133	212	10.3	98
5	1.00	8.0	12.0	10.6	*13	1,260	639	77	95	137	7.7	70
6	.84	6.4	11.6	9.7	20	773	372	65	73	95	6.7	53
7	.73	6.0	12.3	10.9	500	506	265	124	82	71	7.0	41
8	.68	6.2	14.0	12	390	359	476	86	92	59	7.4	41
9	.56	5.7	12.3	14	340	257	1,390	73	257	50	6.0	40
10	.45	4.80	10.9	*14	600	191	686	62	299	113	4.65	58
11	.45	3.30	10.0	14	1,250	142	449	53	128	60	3.85	83
12	.40	2.45	10.3	13	613	110	1,020	47	82	113	3.50	50
13	.34	3.30	10.0	73	363	110	723	46	66	82	3.00	35
14	.34	3.70	10.0	560	228	189	570	96	53	52	2.45	28
15	.31	3.15	14.9	845	249	393	480	70	42	38	2.05	23
16	.31	3.00	17.2	260	282	303	686	71	207	32	1.80	20
17	.31	3.15	16.8	136	194	364	671	64	97	43	1.80	18.6
18	.34	3.50	15.2	120	180	658	1,110	54	81	65	1.80	15.6
19	.34	4.25	15.6	100	644	1,220	2,170	49	265	39	2.20	14.8
20	.34	3.85	20	92	1,690	658	3,840	47	160	26	3.85	13.7
21	.34	3.50	89	72	1,200	384	2,260	41	87	20	5.0	12.0
22	.45	3.85	65	54	704	307	980	32	62	18.0	4.90	9.7
23	.45	4.65	46	38	402	220	593	30	53	86	3.70	8.9
24	.40	6.3	35	25	389	155	414	40	47	276	3.15	8.9
25	.45	8.3	29	28	568	130	290	95	59	328	2.90	42
26	.90	6.4	24	27	354	102	213	75	73	92	21	104
27	2.90	5.7	23	24	311	116	170	57	70	56	1,330	48
28	230	4.80	23	21	498	179	136	44	65	36	1,200	32
29	81	4.65	22	18	515	213	119	36	117	26	2,330	25
30	36	4.80	19.8	16		1,750	105	313	435	21	480	19.8
31	24		17.6	15		2,530		2,590		16.8	1,480	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	388.56	230	0.31	12.5	0.069	0.08
November	175.20	17.6	2.45	5.84	.032	.04
December	630.0	89	5.4	20.3	.113	.13
Calendar year 1939	72,212.78	2,670	.31	198	1.10	14.93
January	2,682.3	845	9.7	86.5	.481	.55
February	12,548.0	1,690	12	433	2.41	2.60
March	20,747	3,100	102	669	3.72	4.29
April	24,415	3,840	105	814	4.52	5.04
May	4,838	2,590	30	156	.867	1.00
June	4,570	709	42	152	.844	.94
July	7,047.8	3,640	16.8	227	1.26	1.45
August	6,985.00	2,330	1.80	225	1.25	1.44
September	2,567.0	734	8.9	85.6	.476	.53
Water year 1939-40	87,593.86	3,840	.31	239	1.33	18.09

Peak discharge.- Mar. 4 (4 a.m.) 4,660 sec.-ft.; Apr. 20 (3 a.m.) 5,450 sec.-ft.; July 1 (7:30 a.m.) 5,130 sec.-ft.

*Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 8-14, Jan. 18 to Feb. 10. Discharge for period of backwater from debris on control, July 2 to Aug. 27, computed on basis of two discharge measurements and gage heights.

Youghiogheny River at Youghiogheny River Dam, Pa.

(Formerly published as Youghiogheny River at Confluence, Pa.)

Location.- Water-stage recorder, lat. 39°48'20", long. 79°21'50", 800 feet upstream from bridge on State Highway 281, a quarter of a mile south of Confluence, Somerset County, and 0.7 mile upstream from Casselman River. Datum of gage is 1,310.17 feet above mean sea level (general adjustment of 1929; Corps of Engineers, U. S. Army, bench mark). Former gage on highway bridge 800 feet downstream at datum 0.38 foot lower.

Drainage area.- 436 square miles (revised).

Records available.- September 1904 to September 1913 (gage heights only January 1911 to September 1913), March to September 1940 in reports of U. S. Geological Survey; September 1904 to September 1922 (gage heights only October 1914 to September 1922), March to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during period, 8,660 second-feet Apr. 20; maximum gage height, 11.70 feet Mar. 31, affected by backwater from Casselman River; minimum discharge, 56 second-feet Aug. 19 (gage height, 3.06 feet); minimum daily discharge, 77 second-feet Aug. 12, 19.

1904-22, 1940: Maximum gage height observed, 19.00 feet Mar. 14, 1907, site and datum then in use (discharge not determined; previously published figure probably in error owing to backwater from Casselman River); minimum observed, 1.14 feet Sept. 27, 1922, site and datum then in use (discharge not determined).

Remarks.- Records good except those for period of backwater, which are fair. Flow regulated by Deep Creek Reservoir (capacity, 4,620,000,000 cubic feet).

Cooperation.- Results of two discharge measurements furnished by Corps of Engineers, U. S. Army. Records of reservoir contents furnished by Pennsylvania Electric Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							c3,420	458	3,110	4,990	226	815
2							c2,220	442	1,940	3,950	158	738
3							c1,600	435	1,320	2,170	216	382
4							c3,960	465	941	1,650	117	425
5							c2,560	572	734	1,230	87	448
6							1,630	510	620	962	188	372
7							g1,240	795	678	658	568	293
8							g1,440	745	564	668	317	220
9							g2,460	706	872	544	238	307
10							g1,880	544	688	430	216	301
11							g1,480	535	840	327	117	288
12							g1,360	407	1,360	483	77	348
13							g1,230	479	785	418	262	309
14							1,100	836	649	295	291	172
15							1,100	765	635	218	281	152
16							3,620	745	403	322	202	140
17							5,160	725	442	282	218	301
18							4,670	441	556	222	88	311
19							4,560	295	2,240	227	77	289
20							7,660	843	2,060	240	256	216
21							5,030	846	1,180	134	289	195
22							3,110	592	805	134	258	138
23							2,060	492	687	385	191	95
24						918	1,540	734	640	379	161	297
25						755	1,250	1,240	630	275	84	1,270
26						706	952	1,710	470	333	542	2,690
27						687	765	2,520	382	222	2,850	1,260
28						765	649	1,600	486	134	3,290	721
29						1,010	544	1,110	805	122	1,620	454
30						c3,560	467	974	678	232	874	405
31						c5,440		4,420		282	646	

Month	Observed: Second-foot-days	Observed: Maximum	Observed: Minimum	Observed: Mean	Change in contents** (equivalent mean)	Adjusted for change in reservoir contents: Mean	Adjusted for change in reservoir contents: Per square mile	Adjusted for change in reservoir contents: Run-off in inches
October								
November								
December								
Calendar year								
January								
February								
March 24-31	13,841	5,440	687	1,730				
April	70,717	7,660	467	2,357	+362	2,719	6.24	6.96
May	27,981	4,420	295	903	-2.99	900	2.06	2.37
June	28,200	3,110	382	940	+121	1,061	2.43	2.71
July	22,918	4,990	122	739	-42.2	697	1.60	1.84
August	15,005	3,290	77	484	-105	379	.869	1.00
September	14,352	2,690	95	478	-83.5	394	.904	1.01
Water year								

**Change in contents in Deep Creek Reservoir.

Peak discharge.- Apr. 20 (8 a.m.) 8,660 sec.-ft.; May 31 (2 p.m.) 5,280 sec.-ft.; July 1 (4 p.m.) 6,160 sec.-ft.

c Backwater from Casselman River; discharge computed on basis of gage heights, three discharge measurements, and records for nearby stations.

g Discharge computed from graph based on chain-gage readings.

Youghiogheny River below Confluence, Pa.

Location.- Water-stage recorder, lat. 39°49'40", long. 79°22'25", 1.0 mile downstream from Casselman River and 1½ miles downstream from Confluence, Somerset County. Datum of gage is 1,302.77 feet above mean sea level (unadjusted).

Drainage area.- 1,029 square miles.

Records available.- June to September 1940.

Extremes.- Maximum discharge during period, 12,200 second-feet Aug. 27 (gage height, 8.49 feet); minimum, 129 second-feet Aug. 25 (gage height, 0.76 foot); minimum daily, 169 second-feet Aug. 25.

Remarks.- Records good. Flow regulated by Deep Creek Reservoir (capacity, 4,620,000,000 cubic feet).

Cooperation.- Records of change in reservoir contents furnished by Pennsylvania Electric Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										9,210	854	2,140
2										7,580	453	1,600
3										4,170	424	952
4										3,130	292	838
5									2,010	2,340	233	820
6									1,610	1,880	a350	676
7									1,530	1,350	a880	565
8									1,350	1,230	a660	615
9									1,870	1,030	a430	2,080
10									1,570	887	a370	1,590
11									2,760	736	a250	1,340
12									6,080	1,310	a190	1,040
13									3,610	1,010	a380	838
14									2,340	692	411	618
15									1,880	554	397	534
16									1,820	828	332	478
17									1,300	853	368	601
18									1,660	596	249	586
19									5,190	534	241	534
20									4,680	498	427	433
21									2,760	367	447	400
22									2,010	423	402	336
23									1,610	796	314	271
24									1,450	856	271	477
25									1,550	618	169	2,140
26									1,400	596	1,830	4,440
27									1,040	513	6,990	2,010
28									1,600	358	7,890	1,200
29									2,900	314	3,540	831
30									2,140	450	2,040	698
31										814	1,520	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October								
November								
December								
Calendar year								
January								
February								
March								
April								
May								
June	59,720	6,080	1,040	2,297				
July	46,523	9,210	314	1,501	-42.2	1,459	1.42	1.64
August	33,604	7,890	169	1,084	-105	979	.951	1.10
September	31,681	4,440	271	1,056	-83.5	972	.945	1.05
Water year								

Peak discharge.- June 11 (11 p.m.) 8,150 sec.-ft.; June 12 (3:30 a.m.) 9,450 sec.-ft.; July 1 (4 p.m.) 12,200 sec.-ft.; Aug. 27 (9:30 p.m.) 12,200 sec.-ft.

**Change in contents in Deep Creek Reservoir.

a No gage-height record; discharge computed on basis of two discharge measurements and records for stations upstream.

Youghiogheny River at Connellsville, Pa.

Location.- Water-stage recorder, lat. 40°01'05", long. 79°35'40", at Crawford Avenue Bridge in Connellsville, Fayette County, three quarters of a mile upstream from Mounts Creek. Datum of gage is 860.13 feet above mean sea level (Baltimore & Ohio Railroad bench mark).

Drainage area.- 1,326 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; July 1908 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 31 years (1908-18, 1919-40), 2,491 second-feet (records prior to 1939, unadjusted).

Extremes.- Maximum discharge during year, 37,000 second-feet Mar. 31 (gage height, 13.16 feet); minimum, 54 second-feet Oct. 18 (gage height, 0.42 foot); minimum daily, 78 second-feet Oct. 17.

1908-40: Maximum discharge, 92,500 second-feet Mar. 18, 1936 (gage height, 20.28 feet), from rating curve extended above 40,000 second-feet; minimum, 11 second-feet Sept. 23, 26, 27, 1908, Oct. 18, 1910 (gage height, 0.11 foot).

Remarks.- Records good except those for period of ice effect, which are fair. Flow regulated by power plants and reservoirs upstream. Deep Creek Reservoir, the only large reservoir in the basin, has a capacity of 4,620,000,000 cubic feet.

Cooperation.- Records of change in reservoir contents furnished by Pennsylvania Electric Co. Results of one discharge measurement furnished by West Penn Power Co.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	327	841	387	616	480	1,480	14,600	1,770	11,400	10,800	1,110	2,050
2	369	954	387	630	470	2,110	8,950	1,790	7,170	10,500	598	2,000
3	318	734	374	640	460	5,900	7,510	1,720	4,970	5,640	446	1,230
4	482	554	566	650	450	8,910	17,100	1,480	3,570	4,140	392	1,020
5	390	478	705	640	*440	9,900	10,500	1,640	2,800	2,960	286	977
6	342	511	621	590	430	6,820	6,930	1,230	2,260	2,420	238	787
7	308	825	742	530	1,100	4,890	5,080	1,880	2,050	1,790	1,360	659
8	271	925	1,020	480	1,900	3,710	5,240	1,980	1,870	1,540	946	628
9	165	1,290	1,370	*460	1,500	2,980	9,760	1,770	1,960	1,340	626	2,250
10	156	945	1,160	470	3,200	2,480	7,420	1,570	2,540	1,160	470	2,560
11	120	727	1,080	480	9,400	2,030	5,750	1,410	1,980	968	357	2,040
12	107	614	1,140	480	8,200	1,820	5,410	1,280	7,720	1,720	256	1,480
13	111	514	1,070	490	8,910	2,100	4,860	1,130	4,860	1,500	204	1,140
14	156	600	1,160	900	7,040	2,240	4,340	1,530	3,130	977	378	872
15	159	553	1,080	2,600	4,880	2,400	4,040	1,610	2,340	746	387	692
16	119	469	913	1,800	3,710	2,240	8,220	1,600	2,640	1,020	362	604
17	78	410	1,020	1,400	3,160	1,960	11,800	1,570	1,880	1,210	312	626
18	131	414	1,310	1,100	3,160	3,960	12,600	1,360	2,100	853	349	670
19	227	357	1,280	900	2,980	13,800	12,900	941	5,420	670	268	604
20	201	327	1,370	800	3,250	11,200	23,300	3,040	6,950	604	267	514
21	199	427	2,030	840	2,980	8,190	17,000	3,660	3,940	520	446	466
22	171	492	1,860	850	2,560	6,380	10,900	2,420	2,720	423	417	417
23	127	595	1,340	840	2,030	4,790	7,670	2,050	2,190	790	355	340
24	121	479	1,170	800	1,760	3,710	5,750	3,040	1,910	1,030	290	346
25	235	421	1,010	740	1,720	2,980	4,650	3,480	1,980	819	250	1,510
26	291	441	888	690	1,480	2,400	3,660	5,130	1,980	700	1,240	4,900
27	422	378	878	640	1,390	2,480	3,040	8,680	1,480	648	6,940	2,540
28	2,570	417	813	590	1,530	3,170	2,560	5,750	1,650	485	10,400	1,530
29	2,920	488	1,300	560	1,630	5,260	2,120	3,940	3,850	383	4,780	1,030
30	1,400	391	1,310	530		14,700	1,980	3,660	2,880	439	2,650	828
31	848		1,040	510		28,200		14,900		648	1,870	

Month	Observed				Change in contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	13,841	2,920	78	446	-74.9	371	0.280	0.32
November	17,571	1,290	327	586	-113	473	.357	.40
December	32,394	2,030	374	1,045	-28.6	1,016	.766	.88
Calendar year	806,475	25,400	74	2,210	+27.7	2,238	1.69	22.89
January	24,246	2,600	460	782	+62.7	845	.637	.73
February	82,200	9,400	430	2,834	+7.6	2,842	2.14	2.31
March	175,190	28,200	1,480	5,651	+238	5,889	4.44	5.12
April	245,540	23,300	1,880	8,185	+362	8,547	6.45	7.20
May	89,011	14,900	941	2,871	-2.99	2,868	2.16	2.49
June	104,190	11,400	1,480	3,473	+121	3,594	2.71	3.02
July	59,443	10,800	383	1,918	-42.2	1,876	1.41	1.63
August	39,250	10,400	204	1,266	-105	1,161	.876	1.01
September	37,310	4,900	340	1,244	-83.5	1,160	.875	.98
Water year 1939-40	920,186	28,200	78	2,514	+28.2	2,542	1.92	26.09

Peak discharge.- Mar. 19 (11 a.m.) 15,900 sec.-ft.; Mar. 31 (3 a.m.) 37,000 sec.-ft.; Apr. 4 (7 a.m.) 19,900 sec.-ft.; Apr. 20 (11 a.m.) 26,400 sec.-ft.; May 31 (11 a.m.) 17,100 sec.-ft.; July 1 (6 p.m.) 15,400 sec.-ft.

*Winter discharge measurement made on this day.

**Change in contents in Deep Creek Reservoir.

Note.- Stage-discharge relation affected by ice Jan. 2 to Feb. 12.

Youghiogheny River at Sutersville, Pa.

Location.- Water-stage recorder, lat. 40°14'25", long. 79°48'25", 500 feet upstream from highway bridge at Sutersville, Westmoreland County, and 2.1 miles downstream from Sewickley Creek. Datum of gage is 733.14 feet above mean sea level (general adjustment of 1907).
Drainage area.- 1,715 square miles.
Records available.- October 1931 to September 1936, December 1938 to September 1940 in reports of U. S. Geological Survey; June 1915 to September 1929, June 1931 to September 1936, December 1938 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.- 15 years (1920-29, 1931-36, 1939-40), 2,915 second-feet (records prior to 1939, unadjusted).
Extremes.- Maximum discharge during year, 41,600 second-feet Mar. 31; maximum gage height, 21.61 feet Feb. 11 (caused by ice); minimum discharge, 94 second-feet Oct. 19 (gage height, 2.11 feet); minimum daily discharge, 117 second-feet Oct. 18.
1915-29, 1931-36, 1938-40: Maximum discharge, 100,000 second-feet Mar. 18, 1936 (gage height, 30.65 feet, from floodmarks), by slope-area method; minimum gage height, 1.96 feet July 10, 1918 (discharge not determined).
Remarks.- Records excellent except those for period of ice effect, which are fair. Flow regulated by power plants and reservoirs upstream. Deep Creek Reservoir, the only large reservoir in the basin, has a capacity of 4,620,000,000 cubic feet.
Cooperation.- Records of change in reservoir contents furnished by Pennsylvania Electric Co. Results of one discharge measurement furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	255	839	445	910	690	2,290	19,100	2,300	15,400	8,470	958	2,480
2	398	1,010	452	740	*680	2,720	11,100	2,300	9,310	13,200	1,060	2,560
3	418	948	452	770	670	7,060	8,890	2,250	6,600	7,270	591	1,840
4	385	711	481	800	660	11,200	22,000	2,030	4,850	5,060	520	1,260
5	554	591	719	820	660	12,400	14,100	1,940	3,700	3,700	448	1,090
6	445	554	769	790	660	9,080	8,620	1,800	2,900	3,000	411	1,020
7	388	622	728	750	1,600	6,600	6,600	1,750	2,620	2,250	834	831
8	361	906	893	700	2,700	5,060	6,420	2,370	2,300	1,830	1,500	1,160
9	332	1,140	1,370	640	2,200	4,120	11,600	2,130	2,090	1,710	906	3,840
10	213	1,360	1,390	640	5,200	3,400	9,310	1,970	2,900	1,440	630	3,940
11	194	920	1,190	*680	14,400	2,810	7,260	1,700	2,720	1,360	520	3,530
12	170	761	1,180	700	11,300	2,410	6,820	1,580	7,140	2,210	411	2,310
13	144	638	1,180	710	12,000	2,410	6,380	1,390	6,160	2,090	339	1,730
14	132	561	1,190	1,400	8,500	2,810	5,720	1,500	4,220	1,440	348	1,370
15	189	709	1,270	3,600	6,300	3,100	5,170	1,890	2,900	1,060	461	1,000
16	203	568	1,080	2,900	5,000	3,000	10,400	1,840	3,900	977	461	823
17	179	502	987	2,200	3,900	2,720	12,400	1,830	2,860	1,390	411	715
18	117	481	1,220	1,600	3,750	4,040	14,700	1,720	2,370	1,240	405	799
19	132	473	1,440	1,250	3,700	14,200	14,500	1,310	5,660	920	474	760
20	273	405	1,380	950	4,300	14,500	28,200	2,680	8,390	761	363	693
21	251	385	2,110	1,000	3,600	10,000	22,300	4,800	5,170	703	397	604
22	251	542	2,420	1,050	3,100	7,700	14,100	3,300	3,500	591	500	552
23	208	561	1,710	1,030	2,700	6,160	9,770	2,530	2,620	591	461	500
24	179	654	1,380	1,000	2,400	4,740	7,480	3,180	2,300	1,060	405	448
25	157	459	1,170	950	2,150	3,900	6,180	3,800	2,250	1,140	357	699
26	374	502	1,090	900	1,950	3,300	4,960	5,390	2,360	856	514	4,230
27	524	473	902	850	1,800	2,900	4,120	8,880	2,060	812	4,710	3,630
28	1,510	411	930	810	2,240	3,500	3,400	7,260	1,960	797	11,400	2,040
29	3,700	545	1,250	780	2,410	5,390	2,900	5,060	3,900	624	6,240	1,430
30	2,080	502	1,640	740		13,300	2,530	4,250	3,800	578	3,430	1,050
31	1,180		1,300	710		35,300		16,500		591	2,740	

Month	Observed				Change in Contents** (equivalent mean)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	15,896	3,700	117	513	-74.9	438	0.255	0.29
November	19,733	1,360	385	658	-113	545	.318	.35
December	35,718	2,420	445	1,152	-28.6	1,123	.655	.76
Calendar year 1939	979,769	34,900	117	2,684	+27.7	2,712	1.58	21.44
January	33,370	3,600	640	1,076	+62.7	1,139	.664	.77
February	111,220	14,400	660	3,835	+7.58	3,843	2.24	2.42
March	212,120	35,300	2,290	6,843	+238	7,081	4.13	4.76
April	307,010	28,200	2,530	10,230	+362	10,590	6.17	6.88
May	103,230	16,500	1,310	3,330	-2.99	3,327	1.94	2.24
June	128,910	15,400	1,960	4,297	+121	4,418	2.58	2.88
July	69,721	13,200	578	2,249	-42.2	2,207	1.29	1.49
August	43,205	11,400	339	1,394	-105	1,289	.752	.87
September	48,934	4,230	448	1,631	-83.5	1,548	.903	1.01
Water year 1939-40	1,129,067	35,300	117	3,085	+28.2	3,113	1.82	24.72

Peak discharge.- Mar. 31 (9 a.m.) 41,600 sec.-ft.; Apr. 4 (1 p.m.) 24,800 sec.-ft.; Apr. 20 (4 p.m.) 31,800 sec.-ft.; May 31 (5 p.m.) 20,600 sec.-ft.
*Winter discharge measurement made on this day.
**Change in contents in Deep Creek Reservoir.
Note.- Stage-discharge relation affected by ice Jan. 1 to Feb. 27.

Casselman River at Markleton, Pa.

Location.- Chain gage, lat. 39°51'35", long. 79°13'40", at highway bridge at Markleton, Somerset County, 2 miles southwest of Casselman and 7 miles downstream from Coxes Creek. Datum of gage is 1,655.29 feet above mean sea level (general adjustment of 1907).
Drainage area.- 382 square miles.
Records available.- August to September 1913, October 1920 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1913 to September 1940 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.- 20 years (1920-40), 617 second-feet.
Extremes.- Maximum discharge during year, 9,950 second-feet Mar. 31 (gage height, 7.8 feet, from graph based on gage readings); minimum discharge observed, 23 second-feet Oct. 16-20 (gage height, 1.43 feet).
1913-40: Maximum discharge, 35,800 second-feet Mar. 17, 1936 (gage height, 16.4 feet, from floodmark), by slope-area method; minimum discharge observed, 11 second-feet Aug. 13, 1930, July 23, 1936.
Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily. Slight regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	478	78	160	140	357	4,100	449	2,230	2,590	206	930
2	96	326	76	155	135	588	2,370	584	1,380	1,980	112	584
3	178	210	148	150	135	1,540	1,820	549	1,020	1,020	89	417
4	131	151	228	145	130	2,240	4,610	481	770	810	76	313
5	81	151	148	140	130	2,230	2,440	399	658	658	67	252
6	59	162	141	140	160	1,500	1,620	357	515	515	65	200
7	50	174	144	135	540	970	1,220	549	481	417	83	177
8	38	361	261	130	1,100	930	1,990	449	549	363	216	255
9	35	420	270	*130	930	850	2,930	393	584	318	112	784
10	32	280	232	125	1,100	658	1,910	352	481	277	80	658
11	28	223	291	120	2,800	584	1,440	313	532	239	69	549
12	29	189	301	120	2,520	520	1,380	282	2,130	497	63	352
13	27	162	270	115	2,760	580	1,120	262	1,660	335	59	272
14	27	138	270	210	1,680	640	1,020	277	975	234	58	230
15	26	121	285	860	1,020	610	1,080	302	732	188	58	196
16	24	112	246	700	890	560	2,220	324	695	387	74	177
17	23	101	333	550	770	580	2,990	277	515	330	94	155
18	23	96	344	450	890	1,940	2,670	243	584	217	96	142
19	24	93	301	370	770	5,740	3,050	248	1,350	173	87	126
20	24	90	356	330	732	3,720	6,550	1,270	1,370	145	94	112
21	27	90	700	350	658	2,670	4,510	810	770	120	89	104
22	29	88	516	360	481	1,940	2,830	549	584	104	67	94
23	31	98	333	300	450	1,440	2,080	481	515	289	56	94
24	29	104	260	250	410	1,070	1,500	449	449	280	54	89
25	32	96	230	220	360	850	1,220	827	549	200	51	614
26	50	93	220	200	330	695	975	930	515	138	1,030	958
27	117	76	210	185	393	850	850	975	393	132	2,970	417
28	1,050	83	205	170	449	1,400	695	695	952	106	2,710	292
29	576	78	200	160	399	2,430	584	584	1,140	92	1,080	230
30	266	76	190	150		5,710	515	925	810	134	658	204
31	198		170	145		8,250		3,570		360	584	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,501	1,050	23	113	0.296	0.34
November	4,920	478	76	164	.429	.49
December	7,957	700	76	257	.673	.76
Calendar year 1939	213,028	7,300	15	584	1.53	20.75
January	7,725	860	115	249	.652	.75
February	23,262	2,800	130	802	2.10	2.26
March	54,642	8,250	357	1,763	4.62	5.33
April	64,089	6,550	515	2,136	5.59	6.24
May	19,155	3,570	243	618	1.62	1.87
June	25,888	2,230	393	863	2.26	2.52
July	13,648	2,590	92	440	1.15	1.33
August	11,207	2,970	51	362	.948	1.09
September	9,977	958	89	333	.872	.97
Water year 1939-40	245,971	8,250	23	672	1.76	23.95

*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 24 to Feb. 11, Feb. 23-26, Mar. 12-17.

Big Piney Run near Salisbury, Pa.

Location.- Water-stage recorder and concrete control, lat. 39°43'32", long. 79°02'57", an eighth of a mile upstream from Little Piney Run, a quarter of a mile north of Maryland-Pennsylvania State line, and 2½ miles southeast of Salisbury, Somerset County.
Drainage area.- 24.5 square miles.
Records available.- June 1932 to September 1940.
Extremes.- Maximum discharge during year, 1,510 second-feet Aug. 27 (gage height, 5.69 feet), from rating curve extended above 320 second-feet; minimum, 0.36 second-foot Oct. 13 (gage height, 1.05 feet).
1932-40: Maximum discharge, about 4,300 second-feet Apr. 26, 1937 (gage height, 7.6 feet), from rating curve extended above 320 second-feet on basis of slope-area determination of the Mar. 17, 1936 flood (gage height, 7.5 feet; discharge, 4,100 second-feet); minimum, 0.18 second-foot Sept. 27, 28, 1939.
Remarks.- Records good except those for periods of ice effect and those for period of no gage-height record, all of which are fair. Table of daily discharge does not include diversions 3 miles upstream from gage through pumps to city of Frostburg, Md. and from Spring 700 feet upstream from gage by gravity to city of Salisbury, Pa.
Cooperation.- Records furnished by U. S. Geological Survey, College Park, Md.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	20	2.8	6.0	3.5	16	210	27	156	103	3.6	150
2	5.7	13	4.0	4.5	4.0	23	133	33	99	73	2.8	96
3	9.4	8.2	11	5.0	3.5	46	113	25	69	54	2.2	65
4	3.5	5.8	3.4	4.5	3.5	100	171	22	50	41	1.9	45
5	2.2	9.4	3.1	4.5	4.0	110	122	20	38	30	1.6	34
6	1.8	5.1	5.3	4.5	4.5	83	88	17	30	22	1.4	27
7	1.6	7.1	6.0	4.0	7.0	64	70	18	25	17	25	21
8	.90	24	10	4.5	15	53	134	16	24	14	7.1	33
9	.69	20	8.4	4.0	14	39	153	15	26	13	4.0	85
10	.76	16	10	4.0	23	33	117	14	17	10	2.8	62
11	.69	13	15	4.0	48	31	89	12	46	9.2	2.8	45
12	.63	10	14	4.0	45	29	76	11	96	15	2.8	36
13	.40	8.4	10	4.5	47	27	63	11	75	10	1.7	29
14	a.40	6.6	12	5.0	32	29	55	10	47	5.8	1.8	24
15	a.40	6.0	9.0	8.0	26	30	54	9.7	37	5.8	5.5	18
16	a.45	4.6	10	27	25	28	107	13	28	15	13	15
17	a.45	4.2	13	18	22	40	179	9.4	22	8.7	17	13
18	a.45	4.2	11	15	20	129	160	8.7	36	7.1	11	11
19	a.40	3.1	9.4	12	22	288	166	9.4	74	5.8	14	9.4
20	a.45	3.8	22	9.7	24	210	363	51	64	4.0	9.4	8.4
21	a.60	3.6	24	8.5	22	159	237	37	46	3.8	8.0	7.1
22	a1.0	3.8	20	8.0	21	120	154	32	35	4.4	7.7	9.0
23	.69	5.0	19	7.5	20	88	110	27	28	6.3	6.6	5.5
24	.51	3.4	15	7.0	18	65	88	27	27	4.8	7.1	6.8
25	.51	3.8	11	6.0	16	50	69	59	25	3.8	6.0	74
26	3.0	3.3	13	5.0	15	45	56	50	18	2.4	282	47
27	8.2	3.1	10	4.5	*16	*52	45	48	15	3.5	709	32
28	36	2.0	11	4.0	18	100	37	38	37	2.0	303	25
29	12	2.6	11	4.0	16	182	31	35	30	7.2	146	19
30	7.1	2.3	8.7	4.0		322	27	72	24	9.8	101	16
31	13		7.7	4.0		373		269		4.8	167	

Month	Observed				Diversions** (equivalent mean)	Adjusted for diversion		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	117.08	36	0.40	3.78	0.59	4.37	0.178	0.21
November	225.4	24	2.0	7.51	.32	7.83	.320	.36
December	339.8	24	2.8	11.0	.37	11.4	.465	.54
Calendar year 1939	10,874.18	322	.18	29.8	.34	30.1	1.23	16.69
January	215.2	27	4.0	6.94	.73	7.67	.313	.36
February	555.0	48	3.5	19.1	.65	19.8	.808	.87
March	2,964	373	16	95.6	.46	96.1	3.92	4.52
April	3,477	363	27	116	.11	116	4.73	5.28
May	1,046.2	269	8.7	33.7	.23	33.9	1.38	1.59
June	1,344	156	15	44.8	.26	45.1	1.84	2.05
July	516.2	103	2.0	16.7	.36	17.1	.698	.80
August	1,874.8	709	1.4	60.5	.41	60.9	2.49	2.87
September	1,068.2	150	5.5	35.6	.18	35.8	1.46	1.63
Water year 1939-40	13,742.88	709	.40	37.5	.39	37.9	1.55	21.08

Peak discharge.- Mar. 30 (10:30 p.m.) 600 sec.-ft.; Aug. 26 (7 a.m.) 600 sec.-ft.; Aug. 27 (1:30 p.m.) 1,510 sec.-ft.
* Winter discharge measurement made on this day.
** Diversion to Frostburg, Md., and Salisbury, Pa.
a No gage-height record; discharge computed on basis of weather records and records for Evitts Creek near Bedford Valley, Pa.
Note.- Stage-discharge relation affected by ice, Jan. 1-15, Jan. 21 to Feb. 26, Mar. 9-16, 24-26.

Laurel Hill Creek at Ursina, Pa.

Location.- Water-stage recorder and masonry control, lat. 39°49'15", long. 79°19'15", 500 feet downstream from bridge on State Highway 53, at Ursina, Somerset County, and 2.7 miles upstream from mouth. Datum of gage is 1,335.26 feet above mean sea level (unadjusted).

Drainage area.- 121 square miles.

Records available.- August to September 1913, October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; August 1913 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 24 years (1916-40), 259 second-feet (revised).

Extremes.- Maximum discharge during year, 6,510 second-feet Mar. 30 (gage height, 6.28 feet), from rating curve extended above 2,900 second-feet; minimum, 6.9 second-feet Oct. 13-15 (gage height, 0.72 foot).
1913-40: Maximum discharge, 10,300 second-feet Mar. 17, 1936 (gage height, 10.28 feet, from floodmark, site and datum then in use), by slope-area method; no flow Aug. 22, 1917, Feb. 15, 1919; minimum daily discharge observed, 1 second-foot Aug. 22, Sept. 1, 1917.

Remarks.- Records good except those for periods of ice effect, which are fair. Slight regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	108	26	82	61	190	1,860	168	1,160	1,180	265	94
2	22	88	28	75	60	389	1,080	172	716	753	106	74
3	19.0	62	57	70	60	709	901	109	482	442	68	60
4	19.0	51	78	66	59	812	2,180	100	357	320	52	50
5	16.0	49	60	63	58	745	1,180	88	276	234	43	44
6	12.5	51	60	60	58	615	698	84	221	179	36	38
7	11.0	58	63	59	130	453	515	180	187	146	63	30
8	10.0	93	199	57	250	297	674	128	168	121	43	106
9	9.0	94	161	*55	240	263	1,100	128	218	106	33	368
10	8.4	72	130	54	450	228	775	135	193	91	28	334
11	8.4	62	147	53	1,020	110	567	121	668	91	22	312
12	8.4	56	140	53	984	185	567	109	776	277	20	191
13	7.4	49	124	53	995	210	502	106	422	142	20	142
14	6.9	44	143	110	708	220	463	106	269	91	18.0	109
15	7.4	41	124	330	465	220	444	100	208	76	19.0	91
16	8.4	36	114	280	398	210	785	100	305	174	23	76
17	8.4	35	172	230	327	220	820	94	204	132	20	66
18	7.9	32	168	190	302	585	1,040	84	391	91	18.0	62
19	8.4	34	143	150	278	1,830	1,400	81	902	76	33	54
20	9.0	34	183	135	268	1,330	2,780	327	578	64	38	46
21	9.5	32	250	140	241	940	1,660	258	346	56	26	43
22	14.5	31	199	140	223	673	1,020	191	252	52	18.0	36
23	16.0	35	170	120	203	522	690	196	199	64	16.0	33
24	11.0	39	140	100	168	437	567	384	187	68	15.0	33
25	11.0	36	120	90	161	392	476	446	179	56	14.5	253
26	28	34	115	*80	140	283	390	509	218	52	206	176
27	88	29	115	75	161	245	290	1,240	146	65	493	100
28	585	35	110	70	172	420	221	695	381	44	522	74
29	277	28	105	68	143	860	191	502	420	38	233	60
30	112	28	96	65		3,080	176	549	368	58	138	52
31	78		90	62		3,830		1,960		369	115	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,460.5	585	6.9	47.1	0.389	0.45
November	1,476	108	28	49.2	.407	.45
December	3,830	250	26	124	1.02	1.18
Calendar year 1939	84,158.7	3,520	5.3	231	1.91	25.87
January	3,235	330	53	104	.860	.99
February	8,783	1,020	58	303	2.50	2.70
March	21,503	3,830	110	694	5.74	6.62
April	26,012	2,780	176	867	7.17	8.00
May	9,450	1,960	81	305	2.52	2.91
June	11,397	1,160	146	380	3.14	3.50
July	5,708	1,180	38	184	1.52	1.75
August	2,764.5	522	14.5	89.2	.737	.85
September	3,207	368	30	107	.884	.99
Water year 1939-40	98,826.0	3,830	6.9	270	2.23	30.39

Peak discharge.- Mar. 30 (10 p.m.) 6,510 sec.-ft.; Apr. 4 (2 a.m.) 2,780 sec.-ft.; Apr. 20 (4:30 a.m.) 3,260 sec.-ft.; May 31 (5 a.m.) 2,860 sec.-ft.; July 1 (7:30 a.m.) 1,650 sec.-ft.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 23 to Feb. 11, Mar. 11-17.

Turtle Creek at Trafford, Pa.

Location.- Water-stage recorder, lat. 40°23'15", long. 79°45'55", at Trafford, Westmoreland County, 500 feet upstream from Brush Creek and 5.8 miles upstream from mouth. Datum of gage is 765.08 feet above mean sea level (general adjustment of 1907).

Drainage area.- 55.9 square miles.

Records available.- October 1920 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; July 1914 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 20 years (1920-40), 78.0 second-feet.

Extremes.- Maximum discharge during year, 2,380 second-feet Apr. 20 (gage height, 6.65 feet); minimum, 0.50 second-foot Oct. 8, 10, 14.
1914-40: Maximum discharge, 4,420 second-feet Mar. 15, 1933 (gage height, 8.5 feet, from graph based on gage readings, site and datum then in use), from rating curve extended above 500 second-feet; minimum, 0.1 second-foot Oct. 6, 7, 1922, Sept. 16, 17, 28, 1939.

Remarks.- Records good. Some regulation at low stages owing to industrial plants upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.05	7.1	3.70	4.50	2.95	91	455	77	230	102	24	63
2	2.05	5.2	4.80	3.15	3.15	195	237	79	148	69	17.6	37
3	2.05	4.80	7.1	3.15	3.40	605	396	67	99	54	14.2	27
4	1.30	3.70	6.2	3.40	3.40	704	552	58	68	42	12.0	20
5	.88	4.50	5.9	2.25	3.40	292	255	52	55	32	10.6	16.1
6	.74	5.5	6.6	2.25	4.80	177	166	48	44	26	283	12.8
7	.74	4.80	6.6	3.15	33	112	128	52	38	22	173	10.6
8	.60	5.2	5.9	3.40	18.0	80	277	44	32	20	53	74
9	.74	4.50	4.20	3.70	18.0	56	418	56	30	39	32	99
10	.74	3.95	5.2	3.40	104	39	235	43	28	32	22	93
11	.74	3.95	6.6	3.40	236	32	174	38	30	23	17.0	59
12	.88	3.70	4.80	4.50	135	23	286	35	32	22	14.2	40
13	.74	3.40	7.1	8.5	77	19.8	204	33	24	17.5	12.3	31
14	.60	3.15	8.9	49	40	48	162	32	20	14.1	11.3	24
15	.74	3.15	6.4	96	47	57	137	30	45	12.8	10.0	19.4
16	1.02	2.95	8.9	31	43	44	166	34	55	39	8.5	16.1
17	1.16	3.40	8.0	29	39	62	148	29	28	19.1	9.3	15.1
18	1.30	3.40	7.1	27	45	126	274	26	26	15.8	9.0	12.8
19	1.30	3.40	6.6	23	54	326	456	24	80	12.5	18.2	11.3
20	1.55	3.40	25	14.8	142	154	1,270	29	42	10.8	10.0	11.0
21	1.30	2.95	31	12.8	204	93	546	22	29	9.4	8.1	10.0
22	1.87	3.40	18.2	10.5	125	71	314	20	24	7.8	7.4	8.8
23	1.87	4.80	9.6	7.5	100	46	212	21	22	52	6.7	8.1
24	2.25	4.25	13.4	5.9	61	42	162	31	32	40	6.4	9.2
25	3.30	3.15	8.4	6.2	75	34	126	42	24	18.6	6.0	85
26	10.8	2.50	9.4	6.2	67	23	104	36	32	53	10.6	39
27	62	2.55	8.0	4.80	44	25	82	57	26	52	72	27
28	48	3.40	8.0	4.80	60	121	71	42	164	121	38	20
29	15.7	2.50	7.5	4.50	64	131	66	34	189	104	20	16.5
30	9.9	3.15	7.5	3.70		568	61	60	118	58	18.2	14.6
31	8.0		6.6	3.40		788		657		34	47	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	186.91	62	0.60	6.03	0.108	0.12
November	115.80	7.1	2.50	3.86	.069	.08
December	273.20	31	3.70	8.81	.158	.18
Calendar year 1939	18,696.00	705	.20	51.2	.916	12.41
January	388.85	96	2.25	12.5	.224	.26
February	1,852.10	236	2.95	63.9	1.14	1.23
March	5,184.8	788	19.8	167	2.99	3.45
April	8,140	1,270	61	271	4.85	5.41
May	1,908	657	20	61.5	1.10	1.27
June	1,814	230	20	60.5	1.08	1.20
July	1,174.4	121	7.8	37.9	.678	.78
August	1,001.6	283	6.0	32.3	.578	.67
September	930.4	85	8.1	31.0	.555	.62
Water year 1939-40	22,970.06	1,270	.60	62.8	1.12	15.27

Peak discharge.- Mar. 4 (12:30 a.m.) 1,240 sec.-ft.; Mar. 30 (9:30 p.m.) 1,380 sec.-ft.; Apr. 3 (11:30 p.m.) 1,290 sec.-ft.; Apr. 20 (3 a.m.) 2,380 sec.-ft.; May 31 (3 a.m.) 1,420 sec.-ft.; Aug. 6 (10 p.m.) 1,360 sec.-ft.

Beaver River at Wampum, Pa.

Location.- Water-stage recorder, lat. 40°53'15", long. 80°20'05", at highway bridge at Wampum, Lawrence County, 2 3/4 miles upstream from Connoquenessing Creek. Datum of gage is 736.24 feet above mean sea level (Pennsylvania Railroad bench mark).
Drainage area.- 2,235 square miles.
Records available.- June to September 1914, August 1932 to September 1940.
Extremes.- Maximum discharge observed during year, 29,200 second-feet Apr. 21 (gage height, 17.7 feet, affected by backwater), from discharge measurement made on peak; minimum discharge, 290 second-feet Jan. 8 (gage height, 2.25 feet).
1914, 1932-40: Maximum discharge, 48,000 second-feet Jan. 25, 1937 (gage height, 21.44 feet, from floodmark), by contracted-opening method; minimum discharge observed, 74 second-feet July 30, 1933 (gage height, 1.70 feet); minimum daily discharge, 97 second-feet July 22, Aug. 23, 1933.
Maximum stage known, 29.9 feet, from floodmark, Mar. 26, 1913 (discharge, about 87,000 second-feet).
Remarks.- Records good. Some regulation from storage in Meander Creek, Milton, and Pymatuning Reservoirs (combined storage capacity, 11,275,000,000 cubic feet).
Revisions.- Revised figures of discharge, in second-feet, for the water year 1939, superseding those published in Stream Flow Records of Pennsylvania--1938-39, are given herein:

Feb. 25 . . . 4,300 June 23 . . . 1,310

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
February	16,600	4,120	7,768	3.48	3.62
June	1,670	370	676	.302	.34
Water year 1938-39	24,600	346	2,144	.959	13.03

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	684	662	326	350	360	1,110	14,000	1,750	14,200	3,480	452	961
2	574	527	380	341	365	1,620	8,490	1,730	11,400	3,010	426	813
3	547	458	514	336	355	5,420	5,770	1,680	7,330	2,410	408	646
4	489	447	595	322	341	17,400	10,800	1,580	4,840	1,640	396	555
5	441	418	676	317	336	15,400	10,000	1,440	3,560	1,160	384	506
6	429	391	708	312	400	13,400	6,730	1,310	2,710	894	402	459
7	418	391	654	299	768	10,100	5,200	1,270	2,110	744	472	433
8	402	412	602	299	639	6,210	4,840	1,200	2,180	694	459	466
9	402	418	554	317	609	4,640	5,580	1,130	4,910	646	390	622
10	412	407	514	308	1,210	3,630	4,660	1,050	7,730	608	426	513
11	412	412	533	312	4,850	3,000	4,140	961	6,730	787	420	459
12	412	396	574	326	5,090	2,560	9,740	876	6,530	1,170	402	440
13	381	376	602	355	6,020	2,490	10,800	831	4,840	904	414	426
14	441	381	867	500	5,090	2,780	8,740	849	3,970	686	402	420
15	412	365	894	1,900	3,310	3,000	7,130	904	3,470	592	390	408
16	429	391	840	2,630	2,560	2,700	6,530	1,020	3,570	615	378	390
17	476	453	654	2,020	2,140	2,780	6,150	1,020	2,260	956	384	408
18	429	453	684	1,280	1,950	5,040	8,740	932	1,680	1,040	408	402
19	407	441	669	850	1,820	14,900	8,740	858	2,940	770	674	396
20	402	429	874	676	2,320	12,600	19,200	894	2,780	646	555	396
21	418	441	1,020	632	3,230	8,950	28,300	822	1,710	570	466	396
22	381	476	894	554	3,000	6,730	22,600	736	1,150	527	408	384
23	360	470	723	502	2,350	5,200	14,600	736	932	585	378	360
24	370	402	588	464	1,950	4,220	7,250	1,180	1,030	541	366	384
25	386	381	495	429	1,680	3,640	4,840	5,030	1,150	459	360	751
26	562	360	495	396	1,390	3,080	3,720	6,930	1,520	496	396	786
27	1,190	341	495	381	1,230	2,780	3,010	5,200	1,840	1,310	603	646
28	3,240	341	435	370	1,150	3,360	2,560	3,400	1,800	778	654	548
29	2,140	336	429	355	1,110	6,550	2,340	2,710	2,110	600	585	472
30	1,400	331	412	370		10,200	2,040	2,480	2,940	534	621	440
31	876		386	370		16,900		11,000		492	894	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	20,322	3,240	360	656	0.294	0.34
November	12,507	662	331	417	.187	.21
December	19,086	1,020	326	616	.276	.32
Calendar year 1939	765,451	24,600	326	2,097	.938	12.75
January	18,873	2,630	299	609	.272	.31
February	57,623	6,020	336	1,987	.889	.96
March	202,390	17,400	1,110	6,529	2.92	3.37
April	257,240	28,300	2,040	8,575	3.84	4.28
May	63,509	11,000	736	2,049	.917	1.06
June	115,922	14,200	932	3,864	1.73	1.93
July	30,344	3,480	459	979	.438	.50
August	14,373	894	360	464	.208	.24
September	15,286	961	360	510	.228	.25
Water year 1939-40	827,475	28,300	299	2,261	1.01	13.77

Peak discharge.- Apr. 12 (7 a.m.) 11,300 sec.-ft.; Apr. 21 (9 a.m.) 29,200 sec.-ft.; May 31 (6 p.m.) 14,700 sec.-ft.
Note.- Discharge for period of backwater effect from Connoquenessing Creek at Hazen, Apr. 20-23, computed on basis of discharge measurement, observed gage heights, and records for nearby stations.

Beaver River at Beaver Falls, Pa.

Location.- Tape gage, lat. 40°45'45", long. 80°18'55", at pumping plant of Beaver Valley Water Co., at Beaver Falls, Beaver County, 5.5 miles upstream from mouth and 7 miles downstream from Connoquenessing Creek. Datum of gage is 727.48 feet above mean sea level (general adjustment of 1929; Corps of Engineers, U. S. Army, bench mark).
Drainage area.- 3,106 square miles.
Records available.- October 1935 to September 1940 (fragmentary). Gage-height records collected at same site since 1908 are contained in reports of U. S. Weather Bureau.
Extremes.- Maximum discharges for the water years 1936 to 1940 are contained in the following table:

Water year	Date	Discharge (sec.-ft.)	Gage height (feet)
1935-36	Mar. 25	48,800	12.1
1936-37	Jan. 25	64,500	13.8
1937-38	Apr. 9	39,700	11.0
1938-39	Mar. 13	40,500	11.1
1939-40	Apr. 21	48,800	12.1

1936-40: Maximum discharge, 64,500 second-feet Jan. 25, 1937 (gage height, 13.8 feet); minimum not determined.
Maximum stage known, 17.4 feet Mar. 27, 1913 (discharge, 103,000 second-feet, from rating curve extended above 50,000 second-feet by logarithmic plotting).

Discharge, in second-feet, water year October 1935 to September 1936.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						10,200	6,700	3,460				
2						6,300	7,930	2,850				
3				.2,240		5,160	8,360	4,110				
4				5,910		7,100	6,700	3,460				
5				6,700		8,360	5,530	2,850				
6				5,910		7,100	6,700	2,070				
7				5,160		4,800	9,750					
8			1,810	4,450		4,110	7,510					
9			5,910	7,340		4,620	5,530					
10			7,930	16,600		9,270	6,300					
11			6,300	12,300		10,200	7,100					
12			4,800	8,360		12,300	6,300					
13		2,120	4,450	7,510		11,800	6,300					
14		2,850	5,910	7,510		8,810	5,530					
15		2,070	8,810	6,300	2,570	9,270	4,800					
16			14,100	5,160	3,150	13,000	4,110					
17			12,300	4,450	2,850	19,200	3,460					
18			8,810	4,110	2,310	18,500	2,850					
19			6,300	4,110	2,310	12,300	2,570					
20			5,160	3,150	2,070	11,300	2,310					
21			3,780	2,850		10,700	2,570					
22			2,850	2,570		9,270	3,150					
23			2,850	1,850		14,400	3,150					
24			2,310			32,100	2,570					
25			2,070		8,140	48,000	2,070					
26					24,600	38,100	1,850					
27					30,400	28,200	1,850					
28					24,600	17,900	1,640					
29					17,800	11,800	1,850					
30						8,810	3,150					
31						7,510						

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October		2,850				
November		14,100				
December						
Calendar year						
January		16,600				
February		30,400				
March	420,490	48,000	4,110	13,560	4.37	5.04
April	140,190	9,750	1,640	4,673	1.50	1.67
May		4,110				
June						
July						
August						
September						
Water year 1935-36		48,000				

Beaver River at Beaver Falls, Pa.

(Continued)

Remarks.- Records good except those below 5,000 second-feet, which are fair. Discharge less than 2,000 second-feet on days for which no discharge is shown. Gage read one or more times daily. Some regulation from storage in Meander Creek, Milton, and Pymatuning Reservoirs (combined storage capacity, 11,275,000,000 cubic feet.
Cooperation.- Gage-height record furnished by U. S. Weather Bureau. Results of 28 discharge measurements furnished by Corps of Engineers, U. S. Army.

Discharge, in second-feet, water year October 1936 to September 1937.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				11,800	8,360		2,850	6,300	2,070			
2				9,750	6,700		2,310	4,450				
3		2,570		9,270	5,530		2,310	3,460				
4		7,790		7,510	4,800		2,070	2,850				
5		17,800		5,530	4,800	2,310	1,850	3,460		4,270		8,670
6		12,900		4,450	4,450	3,460	1,640	5,530		3,460		8,360
7		8,360		3,460	4,110	3,150	1,850	5,530		2,850	2,310	5,910
8		5,910	3,150	7,020	4,110	2,850	2,070	4,450			2,310	3,780
9		5,160	2,310	11,800	7,100	2,570	2,570	3,460			1,850	2,570
10	2,850	4,800	2,310	12,900	8,810	2,310	3,150	3,150			3,840	2,070
11	2,570	3,780	2,570	12,300	6,300		2,310	2,310	4,450		7,930	
12		2,850	3,780	9,270	5,530		2,070	2,070	4,110	6,470	6,700	
13		2,850	2,850	7,510	4,800		1,850	2,730	2,570	5,160	4,450	
14		2,570	2,070	9,200	4,450		1,640	7,510	2,070	9,940	2,850	
15		2,570		35,200	4,800		3,170	6,300	3,780	6,300	2,070	
16		2,310		34,200	4,450	2,070	6,700	4,450	3,460	9,750		
17		2,070		23,900	3,460	2,070	5,160	4,110	2,850	8,360		
18				23,200	3,150	2,070	3,780	3,460	3,460	5,530		
19				23,200	2,850	2,570	3,150	2,850	3,460	3,460		
20				19,200	2,850	3,600	2,310	2,310	3,460	2,570		
21				29,200	3,460	13,100	2,570	2,070	4,860			
22				49,700	4,800	14,700	10,000	2,070	11,800		7,410	
23				45,400	5,530	9,750	12,900	2,570	10,700		5,160	
24				34,900	4,110	6,700	9,750	2,570	7,930		3,460	
25				61,600	3,460	8,360	7,970	2,070	4,800		2,310	
26			2,440	48,000	3,150	11,300	37,000	1,850	3,780			
27	2,570		5,960	33,400	2,570	7,930	43,800	3,390	3,150			
28	2,570		7,450	18,200	2,310	5,530	29,600	10,200	2,310			
29	2,070		7,030	10,200		5,160	17,200	8,810				
30			6,620	8,360		4,450	9,270	4,800				
31			10,500	7,930		3,460		2,570				

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October		2,850				
November		17,800				
December		10,500				
Calendar year						
January	627,560	61,600	3,460	20,240	6.52	7.52
February	130,800	8,810	2,310	4,671	1.50	1.56
March		14,700				
April	234,870	43,800	1,640	7,829	2.52	2.81
May	123,710	10,200	1,850	3,991	1.28	1.48
June		11,800				
July		9,940				
August		7,930				
September		8,670				
Water year 1936-37		61,600				

Beaver River at Beaver Falls, Pa.

(Continued)

Discharge, in second-feet, water year October 1937 to September 1938.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		2,310	2,850	8,170	6,700	3,780	10,200	2,070		2,070		
2		2,070	2,310	10,200	5,160	4,110	7,930	2,070		2,850	2,570	
3				7,930	4,800	4,800	5,910	2,070		2,850	2,310	
4				5,530	5,530	5,160	5,160			2,070		
5				4,450	5,910	5,050	4,110				2,310	
6				3,780	5,910	21,900	3,460				4,800	
7				3,460	12,900	21,100	5,910				4,800	
8				3,150	9,750	13,500	12,800				3,780	
9				2,850	8,360	8,360	33,400				3,150	
10				2,310	12,900	6,700	34,900					
11				2,570	13,500	5,910	24,600					
12				2,310	9,750	4,800	14,000					
13				2,310	7,510	4,450	8,360					
14		2,570		2,070	7,510	15,500	6,300					
15		2,310		2,310	7,100	24,600	5,530					
16		2,850			5,530	17,800	4,800					
17		3,150	7,320	2,070	4,800	23,200	4,450					
18		2,850	30,500	2,070	4,450	21,800	4,800					
19	2,870	2,570	28,900		7,100	15,900	7,100	5,190				
20	4,450	2,310	19,200		11,800	10,200	6,300	12,300				
21	3,460	2,310	11,260		11,800	7,510	4,800	12,900				
22	2,570	2,070	7,100		9,270	6,300	3,780	11,800				
23	3,460	2,070	6,300	2,070	9,270	5,530	3,150	9,270				
24	4,800	2,070	5,530	2,570	9,270	6,300	2,570	10,200				
25	3,780		5,530	8,720	7,100	6,700	2,310	11,800				
26	3,150		5,910	9,270	5,910	5,910	2,310	8,360	8,790			
27	2,850	2,310	5,160	5,910	5,160	5,530	2,310	5,160	10,200			
28	3,780	3,460	4,800	3,780	4,450	4,800	2,070	3,150	7,100			
29	4,110	4,110	5,160	3,150		4,110	2,070	2,570	4,800			
30	3,150	3,460	4,800	3,150		4,110	2,070	2,070	2,850			
31	2,570		4,110	5,910		6,700						

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October		4,800				
November		4,110				
December		30,500				
Calendar year						
January		10,200				
February	219,200	13,500	4,450	7,829	2.52	2.62
March	302,120	24,600	3,780	9,746	3.14	3.62
April	237,460	34,900	2,070	7,915	2.55	2.85
May		12,900				
June		10,200				
July		2,850				
August		4,800				
September						
Water year 1937-38		34,900				

Beaver River at Beaver Falls, Pa.

(Continued)

Discharge, in second-feet, water year October 1938 to September 1939.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					17,800	21,100	12,900	2,850			2,770	
2					14,100	17,200	9,750	2,850				
3					13,500	11,800	7,930	2,310				
4				2,310	15,300	8,910	6,300	2,070				
5				4,110	2,570	10,700	9,270	4,800				
6				3,150	5,160	7,930	12,300	4,800				
7				2,570	4,800	8,810	8,910	7,930				
8				2,310	3,780	9,750	6,300	6,300				
9				2,070	3,150	9,270	5,910	5,530				
10				2,070	2,850	9,750	5,160	4,800				
11					2,850	14,700	4,450	6,300				
12					2,570	11,300	19,000	10,200				
13					2,310	7,930	37,300	9,270				
14						6,700	24,900	6,300				
15						9,280	14,700	8,790				
16						11,300	10,700	11,300				
17						7,930	7,930	10,200				
18						6,700	5,910	9,750				
19		3,410				10,400	5,160	15,300				
20		4,110				20,400	4,800	12,300				
21		3,150				19,800	4,450	8,360				
22		2,310				14,100	3,780	6,300		2,020		
23						9,750	3,460	6,300		4,800		
24						7,100	3,150	5,530		2,310		
25						5,910	3,150	4,800				
26						6,300	2,850	4,110				
27						10,700	2,850	3,780				
28						15,200	4,110	2,570				
29							4,450	2,070				
30				9,510			6,400	2,310			3,040	
31				22,500			14,700				3,780	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October		4,110				
November		4,110				
December						
Calendar year						
January		22,500				
February	317,410	20,400	5,910	11,340	3.65	3.90
March	294,960	37,300	2,850	9,512	3.06	3.53
April	216,980	15,300	2,070	7,229	2.33	2.60
May		2,850				
June		4,800				
July		3,780				
August		2,770				
September						
Water year 1938-39		37,300				

Beaver River at Beaver Falls, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						1,850	19,800	2,570	19,800	4,800		
2						2,570	12,300	2,570	16,600	4,110		
3						7,740	8,360	2,570	10,200	2,850		
4						27,400	14,700	2,310	6,700	2,070		
5						22,500	13,500	2,310	4,800			
6						17,800	8,810	2,070	3,780			
7						13,500	6,700		2,850			
8						8,810	6,300		2,570			
9						6,700	9,750		4,850			
10						5,530	7,930		8,810			
11					9,200	4,110	6,700		7,510			
12					8,810	3,780	14,600		8,810			
13					9,750	3,780	15,900		5,910			
14					7,930	4,110	12,300		4,450			
15				3,490	5,160	5,910	9,750		4,110			
16				4,450	3,780	5,160	8,360		4,800			
17				3,150	3,460	4,450	8,360		2,850			
18					2,850	6,750	15,100		2,070			
19					2,850	21,900	17,800		3,780			
20					3,780	19,200	36,000		3,150			
21					4,800	13,500	46,300		2,070			
22					4,800	9,750	34,200					
23					3,460	7,100	21,000					
24					2,850	5,530	10,700					
25					2,850	4,800	7,100	6,300				
26					2,310	4,110	5,530	8,360				
27						3,780	4,450	6,300	2,850			
28	4,800					4,110	3,780	4,450	2,570			
29	3,780					8,270	3,150	3,460	2,850			
30	2,310					14,000	2,850	3,150	4,110			
31						24,600		15,400				

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October		4,800				
November						
December						
Calendar year						
January		4,450				
February		9,750				
March	293,000	27,400	1,950	9,452	3.04	3.50
April	392,080	46,300	2,850	13,070	4.21	4.70
May		15,400				
June		19,800				
July		4,800				
August						
September						
Water year 1939-40		46,300				

Pymatuning Reservoir at Pymatuning Dam, Pa.

Location.- Water-stage recorder, lat. 41°30'00", long. 80°27'35", in gatehouse at Pymatuning Dam on Shenango River, Crawford County, 1 3/4 miles northwest of Jamestown. Datum of gage is at mean sea level (general adjustment of 1907).
Drainage area.- 158 square miles.
Records available.- October 1933 to September 1940.
Extremes.- Maximum water-surface elevation during year, 1,008.74 feet May 31; minimum, 1,003.86 feet Dec. 7.
1933-40: Maximum water-surface elevation, 1,009.16 feet June 21, 1937; minimum, 975.70 feet Oct. 15, 16, 19, 1933.
Remarks.- Reservoir formed by earth-fill dam, stone faced. Dam completed in 1933; storage began Dec. 5, 1933; all regulating gates closed Jan. 23, 1934. Capacity, 8,191,000,000 cubic feet between elevations 975.3 feet (sill of outlet gate) and 1,008.0 feet (crest of spillway) above mean sea level. Figures given herein represent usable contents; dead storage, 4,034,000 cubic feet. Reservoir used to regulate flow in Shenango River.

Elevation, in feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.87	4.07	3.93	4.14	4.51	5.77	7.44	7.83	8.71	8.21	7.70	7.03
2	4.81	4.12	3.99	4.16	4.52	5.79	7.53	7.82	8.67	8.21	7.60	6.99
3	4.74	4.13	4.03	4.17	4.51	5.87	7.64	7.88	8.60	8.22	7.52	6.97
4	4.69	4.10	4.06	4.17	4.51	6.10	7.92	7.92	8.53	8.21	7.49	6.95
5	4.65	4.11	4.03	4.17	4.51	6.26	7.96	7.87	8.45	8.17	7.50	6.92
6	4.64	4.07	4.04	4.18	4.54	6.35	7.92	7.86	8.40	8.14	7.57	6.90
7	4.62	4.02	4.04	4.18	4.59	6.39	7.88	7.91	8.32	8.11	7.62	6.86
8	4.56	4.08	4.11	4.17	4.60	6.42	7.84	7.93	8.31	8.09	7.56	6.85
9	4.58	4.08	3.96	4.16	4.61	6.45	7.86	7.94	8.37	8.09	7.51	6.83
10	4.53	3.97	4.04	4.14	4.66	6.48	7.79	7.90	8.37	8.08	7.45	6.83
11	4.56	4.07	4.14	4.15	4.82	6.50	7.78	7.93	8.34	8.09	7.40	6.77
12	4.50	4.06	4.00	4.14	4.95	6.53	7.93	7.84	8.34	8.13	7.36	6.71
13	4.45	4.06	4.08	4.15	5.12	6.54	7.87	7.85	8.29	8.05	7.33	6.70
14	4.50	4.05	4.11	4.19	5.25	6.58	7.84	7.85	8.18	7.99	7.30	6.64
15	4.39	4.02	4.04	4.31	5.28	6.60	7.78	7.84	8.11	7.97	7.22	6.66
16	4.35	4.01	4.06	4.37	5.30	6.59	7.79	7.85	8.08	8.10	7.17	6.67
17	4.38	4.02	4.10	4.40	5.33	6.57	7.70	7.88	8.04	8.05	7.14	6.63
18	4.25	4.02	4.10	4.42	5.38	6.58	7.72	7.91	8.05	8.05	7.09	6.60
19	4.21	4.07	4.10	4.44	5.45	6.80	7.78	7.86	8.13	8.02	7.20	6.56
20	4.23	4.02	4.13	4.45	5.52	6.91	8.14	7.89	8.12	8.02	7.14	6.53
21	4.17	4.00	4.11	4.46	5.55	6.92	8.42	7.92	8.07	8.00	7.07	6.53
22	4.21	4.00	4.26	4.47	5.59	6.92	8.42	7.92	8.05	7.99	7.00	6.50
23	4.16	4.00	4.17	4.48	5.62	6.88	8.35	7.98	8.00	7.96	7.03	6.45
24	4.10	4.00	4.17	4.49	5.64	6.82	8.29	8.14	8.01	7.95	7.04	6.44
25	4.04	4.00	4.16	4.50	5.68	6.76	8.21	8.34	8.01	7.88	7.08	6.60
26	4.08	3.99	4.16	4.50	5.69	6.69	8.15	8.39	8.04	7.85	6.98	6.47
27	4.09	3.98	4.16	4.50	5.72	6.65	8.08	8.41	8.04	7.86	6.96	6.42
28	4.22	3.96	4.16	4.51	5.74	6.72	7.98	8.43	8.06	7.83	6.95	6.40
29	4.12	3.94	4.15	4.50	5.75	6.87	7.89	8.43	8.18	7.77	6.90	6.40
30	4.12	3.94	4.14	4.51		7.12	7.84	8.45	8.17	7.76	6.93	6.37
31	4.16		4.14	4.51		7.32		8.67		7.75	6.97	

Note.- Add 1,000 feet to obtain elevations above mean sea level.

Monthly elevation and contents, water year October 1939 to September 1940.

Date	Mean elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Change in contents (equivalent mean second-feet)
September 30	1,004.90	6,320		
October 31	1,004.16	5,899	-421	-157
November 30	1,003.94	5,776	-123	-47.5
December 31	1,004.14	5,888	+112	+41.8
Calendar year 1939			-1,136	-36.0
January 31	1,004.51	6,097	+209	+78.1
February 29	1,005.75	6,816	+719	+287
March 31	1,007.32	7,766	+950	+355
April 30	1,007.84	8,090	+324	+125
May 31	1,008.67	8,618	+528	+197
June 30	1,008.17	8,299	-319	-123
July 31	1,007.75	8,034	-265	-99.0
August 31	1,006.97	7,550	-484	-181
September 30	1,006.37	7,185	-365	-141
Water year 1939-40			+865	+27.4

Shenango River at Pymatuning Dam, Pa.

Location.- Water-stage recorder and concrete control, lat. 41°29'55", long. 80°27'30", 500 feet downstream from Sugar Run, 550 feet downstream from Pymatuning Dam, Crawford County, and 1¼ miles northwest of Jamestown. Datum of gage is 970.00 feet above mean sea level (general adjustment of 1907).

Drainage area.- 167 square miles.

Records available.- June 1934 to September 1940.

Extremes.- Maximum discharge during year, 979 second-feet Apr. 20 (gage height, 7.51 feet); minimum, 1.3 second-feet Jan. 23-25 (gage height, 3.51 feet).
1934-40: Maximum discharge, 1,910 second-feet Sept. 4, 1937 (gage height, 9.2 feet), from rating curve extended above 700 second-feet; minimum, 0.1 second-foot June 30 to July 3, 1934.

Remarks.- Records excellent. Flow regulated by storage in Pymatuning Reservoir (see page 191).

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	174	36	36	28	22	4.0	24	105	657	13.4	153	160
2	174	36	36	28	18.7	5.8	109	82	644	6.6	153	156
3	174	36	39	28	18.7	62	225	81	630	4.2	150	153
4	174	36	39	28	18.7	103	353	81	630	3.3	150	150
5	174	36	38	28	18.7	39	526	79	630	35	160	150
6	174	36	36	28	9.3	23	644	77	630	55	141	150
7	174	36	36	28	2.4	15.6	644	54	630	53	122	150
8	174	36	36	28	3.8	12.4	441	39	419	52	174	150
9	174	36	36	28	4.0	8.9	537	39	32	74	174	150
10	174	36	36	28	17.3	6.4	644	39	243	88	174	150
11	174	36	68	28	73	5.2	523	39	670	88	174	150
12	174	36	140	28	61	4.6	617	39	657	88	174	150
13	174	36	101	29	47	4.7	657	39	630	88	174	150
14	174	36	56	46	9.9	6.4	657	39	630	88	174	150
15	174	36	35	39	9.3	12	644	26	420	90	174	150
16	174	36	34	9.2	10.8	297	644	3.1	4.2	124	204	150
17	174	36	35	7.3	10.1	293	630	2.9	3.7	94	220	150
18	174	36	35	4.2	7.0	286	492	2.6	14.3	90	220	150
19	170	36	29	7.8	7.6	291	347	2.3	27	88	167	150
20	170	36	7.0	4.5	12.3	430	457	2.9	7.1	109	146	150
21	170	36	5.2	2.2	13.8	459	64	2.3	3.8	122	146	150
22	170	36	21	1.7	12.4	520	433	7.2	25	122	146	150
23	170	36	30	1.4	8.0	580	657	14.2	42	122	143	150
24	167	36	30	1.3	5.7	590	657	64	48	119	143	150
25	164	36	29	1.3	5.2	590	644	55	49	140	143	150
26	153	36	29	16	4.4	590	644	21	64	153	150	150
27	117	36	29	28	4.0	346	644	81	61	153	150	150
28	37	36	29	28	4.0	55	644	153	33	150	150	150
29	36	36	29	28	4.0	80	427	153	25	150	146	150
30	56	36	28	28		81	208	256	14.8	150	153	146
31	44		28	28		59		592		150	156	

Month	Observed				Change in contents** (mean second-feet)	Adjusted for change in reservoir contents***		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	4,756	174	36	153	-157	-4.0	-0.024	-0.03
November	1,080	36	36	36.0	-47.5	-11.5	-.069	-.08
December	1,195.2	140	5.2	38.6	+41.8	80.4	.481	.55
Calendar year 1939	85,145.2	644	5.2	178	-36.0	142	.850	11.56
January	646.9	46	1.3	20.9	+78.1	99.0	.593	.68
February	443.1	73	2.4	15.3	+287	302	1.81	1.95
March	5,860.0	590	4.0	189	+355	544	3.26	3.76
April	14,837	657	24	495	+125	620	3.71	4.14
May	2,270.5	592	2.3	73.2	+197	270	1.62	1.87
June	8,573.9	670	3.7	286	-123	163	.976	1.09
July	2,862.5	153	3.3	92.3	-99.0	-6.7	-.040	-.05
August	5,004	220	122	161	-181	-20.0	-.120	-.14
September	4,515	160	146	150	-141	9.0	.054	.06
Water year 1939-40	52,044.1	670	1.3	142	+27.4	169	1.01	13.80

**Change in contents in Pymatuning Reservoir.
***Negative figures indicate that evaporation and seepage from reservoir exceeded natural flow.

Shenango River at Sharpsville, Pa.

Location.- Water-stage recorder, lat. 41°16'00", long. 80°28'20", 700 feet upstream from Erie Railroad bridge at Sharpsville, Mercer County, and 3 miles downstream from Pymatuning Creek. Datum of gage is 862.19 feet (revised) above mean sea level (general adjustment of 1929).

Drainage area.- 588 square miles.

Records available.- March 1938 to September 1940.

Extremes.- Maximum discharge during year, 7,880 second-feet Apr. 21 (gage height, 9.08 feet); minimum, 81 second-feet Nov. 7, 16, 20 (gage height, 2.40 feet).

1938-40: Maximum discharge, that of Apr. 21, 1940; minimum, that of Nov. 7, 16, 20, 1939.

Maximum stage known, about 14.6 feet, from profiles of Pymatuning surveys, Mar. 26, 1913 (discharge not determined).

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by storage in Pymatuning Reservoir (see page 191) and from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	249	134	99	96	110	190	3,120	434	3,550	886	179	313
2	237	111	114	94	105	280	1,760	390	3,040	651	176	260
3	225	101	142	90	98	1,290	1,630	378	2,050	462	176	233
4	218	94	165	88	94	3,100	2,920	373	1,440	278	172	213
5	214	90	181	86	92	3,040	2,500	345	1,180	201	168	201
6	214	85	190	85	91	2,260	1,920	313	1,010	176	190	190
7	211	90	178	85	90	1,480	1,510	323	938	186	186	182
8	208	94	168	85	*120	1,180	1,410	278	1,650	168	152	201
9	208	94	151	*88	140	896	1,190	251	1,870	162	201	186
10	211	92	145	*90	400	701	1,250	233	1,650	222	197	179
11	218	97	153	92	1,600	551	1,210	213	2,360	313	197	176
12	214	94	204	100	2,000	446	2,500	193	2,260	260	193	176
13	214	92	288	140	2,000	362	2,680	186	1,980	197	193	176
14	214	92	310	300	1,610	390	2,200	209	1,480	179	193	176
15	214	90	278	700	1,010	473	1,920	217	1,250	165	193	176
16	211	85	222	650	800	598	1,700	213	875	443	190	176
17	208	85	208	450	550	701	1,380	193	339	636	217	176
18	197	85	208	330	400	1,300	1,980	186	269	323	238	172
19	190	83	197	230	330	3,160	1,760	176	604	225	269	172
20	190	81	245	180	380	3,040	4,270	176	444	190	217	176
21	174	85	288	150	480	2,260	7,400	172	264	182	179	172
22	174	94	247	130	410	1,820	4,790	152	201	186	172	168
23	174	99	184	110	330	1,390	2,680	140	182	182	172	165
24	171	99	171	100	250	1,170	1,870	401	238	176	172	174
25	174	101	139	*90	220	1,060	1,390	1,310	293	168	168	293
26	187	99	171	85	190	886	1,210	1,130	367	182	193	251
27	314	99	117	85	180	877	1,030	886	573	217	213	209
28	416	97	130	94	170	1,020	943	831	514	209	229	193
29	276	94	120	100	170	2,210	886	796	905	193	217	190
30	184	99	110	108		3,140	620	991	886	186	217	182
31	165		100	110		4,340		3,530		182	298	

Month	Observed				Change in contents** (mean second-feet)	Adjusted for change in reservoir contents		
	Second-foot-days	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	6,674	416	165	215	-157	58.0	0.099	0.11
November	2,835	134	81	94.5	-47.5	47.0	.080	.09
December	5,623	310	99	181	+41.8	223	.379	.44
Calendar year 1939	210,524	4,310	81	577	-36.0	541	.920	12.55
January	5,221	700	85	168	+78.1	246	.418	.48
February	14,420	2,000	90	497	+287	784	1.33	1.43
March	45,611	4,340	190	1,471	+355	1,826	3.11	3.59
April	63,629	7,400	620	2,121	+125	2,246	3.82	4.26
May	15,619	3,530	140	504	+197	701	1.19	1.37
June	34,662	3,550	182	1,155	-123	1,032	1.76	1.96
July	8,386	886	162	271	-99.0	172	.293	.34
August	6,127	298	152	198	-181	17.0	.029	.03
September	5,907	313	165	197	-141	56.0	.095	.11
Water year 1939-40	214,714	7,400	81	587	+27.4	614	1.04	14.21

*Winter discharge measurement made on this day.
**Change in contents in Pymatuning Reservoir.
Note.- Stage discharge relation affected by ice, Dec. 28 to Feb. 13, Feb. 16 to Mar. 2. Discharge for periods of backwater from leaves and aquatic vegetation, Oct. 16 to Dec. 5, June 25 to Sept. 30, computed on basis of four discharge measurements, gage heights, and records for other stations in the basin.

Sugar Run at Pymatuning Dam, Pa.

Location.- Water-stage recorder and concrete control, lat. 41°29'50", long. 80°27'55", at highway bridge at Pymatuning Dam, Crawford County, a quarter of a mile upstream from mouth and 1 3/4 miles northwest of Jamestown. Datum of gage is 984.58 feet above mean sea level (general adjustment of 1907).

Drainage area.- 9.34 square miles.

Records available.- March 1934 to September 1940.

Extremes.- Maximum discharge during year, 542 second-feet Apr. 20 (gage height, 3.65 feet); minimum, 0.01 second-foot Aug. 15-17.

1934-40: Maximum discharge observed, 1,820 second-feet Sept. 4, 1937 (gage height, 6.80 feet), from rating curve extended above 300 second-feet; no flow at times.

Remarks.- Records good except those for period of ice effect, which are fair.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.40	.77	.31	.5	.6	4.0	24	3.74	28	13.4	.05	15.6
2	.42	.64	1.16	.5	.6	5.8	14.2	5.2	15.3	6.3	.04	8.8
3	.18	.52	2.84	.4	.5	61	75	4.75	8.6	3.70	.03	5.6
4	.09	.52	2.92	.4	.5	102	68	4.75	5.5	2.59	.03	1.73
5	.05	.46	2.12	.4	.5	39	19.8	3.70	3.90	1.73	.04	1.01
6	.04	.41	1.51	.4	1.0	23	11.3	4.38	4.10	1.40	.52	.70
7	.02	.37	1.20	.4	2.4	15.5	8.4	4.10	12.4	1.10	.66	.52
8	.02	.46	1.01	.4	3.8	12.3	9.5	3.10	33	.93	.25	.58
9	.02	.58	g.85	*.4	4.0	8.9	11.6	2.75	32	.85	.13	.52
10	.03	.46	g1.08	.4	17	6.4	8.8	2.12	12.6	.85	.07	.64
11	.08	.46	g2.92	.4	72	5.2	14.1	1.62	45	.77	.04	.64
12	.14	.46	g1.51	.5	60	4.6	60	1.40	33	.70	.03	.58
13	.11	.46	g5.1	1.2	47	4.6	34	1.40	10.2	.58	.02	.58
14	.09	.41	6.0	35	9.8	6.3	26	1.51	5.5	.41	.02	.46
15	.07	.33	2.71	39	9.2	10.9	23	1.51	4.10	1.24	.01	.93
16	.04	.29	2.16	9.1	10.7	9.4	14.4	2.43	3.50	35	.01	.70
17	.03	.25	3.90	7.2	10.0	7.9	11.3	2.43	2.59	6.2	g.01	.46
18	.03	.25	2.75	4.1	6.9	195	62	2.12	13.9	1.82	g.09	.33
19	.03	.25	2.12	7.7	7.5	296	20.0	1.73	25	1.01	g.52	.33
20	.03	.25	7.0	4.4	12.2	48	256	2.75	6.7	.93	g.25	.41
21	.03	.25	5.1	2.1	13.8	17.2	60	1.85	3.30	.64	g.09	.37
22	.04	.29	2.84	1.6	12.3	11.1	21	1.20	2.27	.37	g.04	.25
23	.05	.41	1.98	1.3	8.0	7.6	13.2	1.10	2.12	.29	g.05	.21
24	.07	.46	1.40	1.3	5.7	4.82	9.5	58	6.9	.36	g.04	.31
25	.05	.37	1.1	1.2	5.1	3.64	7.5	46	7.7	.25	g.09	2.25
26	.11	.29	.9	1.0	4.3	3.20	6.1	14.4	22	.31	g1.94	1.08
27	1.46	.25	.8	.9	4.0	3.13	5.0	8.6	18.3	.82	g4.73	.58
28	4.55	.25	.8	.9	4.0	55	3.90	5.5	19.5	.37	2.40	.41
29	3.30	.25	.7	.8	4.0	78	3.30	4.83	25	.21	.70	.33
30	1.73	.25	.6	.7		79	2.92	23	14.7	.15	6.6	.25
31	1.01		.6	.7		59		148		.09	9.6	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	15.32	4.55	0.02	0.494	0.053	0.06
November	11.67	.77	.25	.389	.042	.05
December	67.99	7.0	.31	2.19	.234	.27
Calendar year 1939	2,755.46	142	0	7.55	.808	10.98
January	125.3	39	.4	4.04	.433	.50
February	337.4	72	.5	11.6	1.24	1.34
March	1,187.49	296	3.13	38.3	4.10	4.73
April	903.82	256	2.92	30.1	3.22	3.59
May	369.97	148	1.10	11.9	1.27	1.46
June	426.68	45	2.12	14.2	1.52	1.70
July	85.37	35	.09	2.75	.294	.34
August	29.10	9.6	.01	.939	.101	.12
September	47.16	15.6	.21	1.57	.168	.19
Water year 1939-40	3,607.27	296	.01	9.86	1.06	14.35

g Discharge based on gage readings made twice daily.
*Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 25 to Mar. 14.

Little Shenango River at Greenville, Pa.

Location.- Water-stage recorder, lat. 41°25'15", long. 80°22'23", 1,500 feet downstream from Williamson Crossing Bridge, 1 mile northeast of Greenville, Mercer County, and 2 miles upstream from mouth. Datum of gage is 953.46 feet above mean sea level (general adjustment of 1912).

Drainage area.- 104 square miles.

Records available.- November 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; January 1914 to August 1923, November 1925 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 20 years (1914-18, 1920-22, 1926-40), 136 second-feet.

Extremes.- Maximum discharge during year, 2,600 second-feet Apr. 20 (gage height, 8.45 feet); minimum, 6.9 second-feet Oct. 17, 24, 25 (gage height, 0.80 foot).

1919-23, 1925-40: Maximum discharge, 4,600 second-feet Jan. 25, 1937 (gage height, 11.00 feet), from rating curve extended above 2,000 second-feet; minimum discharge observed, 2.0 second-feet Aug. 21, 1923.

Remarks.- Records good except those for periods of ice effect, which are fair. Some regulation at low stages from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	26	13	21	26	70	635	84	744	182	12	43
2	21	21	17	20	25	95	332	106	494	117	12	32
3	16	22	31	20	25	318	342	106	f233	82	12	26
4	11	19	44	19	25	1,000	971	97	144	62	11	21
5	10	18	45	19	25	742	482	85	105	50	11	17
6	9.6	16	36	18	25	385	261	82	89	43	14	15
7	8.8	18	30	18	28	f246	190	89	97	38	16	14
8	8.5	20	28	18	*49	f194	194	70	296	35	14	17
9	10	20	28	*20	60	157	332	66	521	32	12	14
10	10	20	30	23	150	131	240	58	332	50	11	16
11	10	20	54	25	750	100	188	51	f163	37	11	14
12	13	20	58	33	900	90	743	46	209	31	9.8	14
13	11	20	56	40	725	96	618	45	137	27	9.8	14
14	10	19	94	100	337	120	370	47	92	24	9.8	14
15	9.6	18	65	350	160	157	281	49	73	24	8.8	14
16	9.2	17	49	222	130	134	214	56	66	291	8.4	16
17	7.3	17	57	130	110	119	173	60	57	126	9.4	13
18	8.8	15	59	100	100	270	468	54	126	57	8.8	13
19	10	16	51	80	110	1,270	367	49	218	39	21	13
20	11	14	104	65	130	757	1,370	53	103	31	20	14
21	10	15	120	55	160	364	1,710	51	69	26	12	13
22	11	16	62	50	130	256	593	46	54	23	9.8	12
23	10	16	50	45	110	140	308	41	50	21	9.8	11
24	8.1	15	40	40	100	110	222	189	70	20	9.4	13
25	9.2	17	32	35	90	95	171	424	84	19	10	60
26	12	16	29	32	80	85	144	233	137	19	23	42
27	19	13	26	30	75	75	123	134	150	27	30	26
28	86	14	24	28	70	210	101	97	192	19	36	24
29	89	15	23	27	70	831	90	78	284	17	22	17
30	50	16	22	27		1,080	82	104	230	16	28	13
31	32		22	26		1,290		710		14	66	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	565.1	89	7.3	18.2	0.175	0.20
November	529	26	13	17.6	.169	.19
December	1,399	120	13	45.1	.434	.50
Calendar year 1939	40,143.8	1,620	5.6	110	1.06	14.34
January	1,736	350	18	56.0	.538	.62
February	4,775	900	25	165	1.59	1.71
March	10,987	1,290	70	354	3.40	3.92
April	12,315	1,710	82	410	3.94	4.40
May	3,460	710	41	112	1.08	1.25
June	5,619	744	50	187	1.80	2.01
July	1,599	291	14	51.6	.496	.57
August	497.8	66	8.4	16.1	.155	.18
September	585	60	11	19.5	.188	.21
Water year 1939-40	44,066.9	1,710	7.3	120	1.15	15.76

Peak discharge.- Mar. 4 (3 p.m.) 1,140 sec.-ft.; Mar. 19 (12 m.) 1,460 sec.-ft.; Mar. 31 (8 a.m.) 1,460 sec.-ft.; Apr. 4 (10 a.m.) 1,140 sec.-ft.; Apr. 20 (11 p.m.) 2,600 sec.-ft.
*Winter discharge measurement made on this day.
f Discharge based on partial gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 23 to Jan. 15, Jan. 17 to Feb. 12, Feb. 15 to Mar. 2, Mar. 11, 12, 23-28.

Pymatuning Creek near Orangeville, Pa.

Location.- Water-stage recorder, lat. 41°18'40", long. 80°28'40", 2 miles upstream from mouth, 3 miles southeast of Orangeville, Mercer County, and 3 miles north of Sharpsville. Datum of gage is 873.35 feet (revised) above mean sea level (general adjustment of 1929; Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 169 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; January 1914 to August 1923, November 1925 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 22 years (1914-22, 1926-40), 202 second-feet.

Extremes.- Maximum discharge during year, 2,460 second-feet Apr. 21 (gage height, 9.65 feet); minimum, 3.7 second-feet Oct. 10 (gage height, 1.29 feet); minimum daily, 4.0 second-feet Oct. 19.

1914-23, 1925-40: Maximum discharge, 3,250 second-feet Mar. 25, 1936 (gage height, 10.68 feet), from rating curve extended above 2,100 second-feet; minimum, 0.2 second-foot Sept. 4, 1939; minimum daily, 0.6 second-foot Sept. 24, 1933, Sept. 2, 1939.

Maximum stage known, 16.0 feet, from floodmark, former site and datum, Mar. 26, 1913, probably affected by backwater from Shenango River (discharge not determined).

Remarks.- Records good except those for period of ice effect, which are fair. Some regulation from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	23	9.5	15	19	60	1,440	61	1,160	384	5.8	34
2	14	17	14	14	18	90	926	68	1,160	324	5.3	30
3	14	14	22	14	18	250	760	69	836	222	4.9	26
4	13	13	31	13	17	750	865	69	592	104	4.7	19.0
5	10	12	37	13	17	1,000	895	65	405	60	4.5	15.0
6	8.5	12	45	13	18	1,100	780	60	188	41	5.1	11.0
7	6.4	12	40	13	20	900	603	59	215	30	6.4	9.4
8	5.2	12	35	12	*32	650	447	55	384	24	7.0	13.0
9	4.8	12	29	*13	45	450	278	51	896	26	7.8	10.5
10	4.4	12	27	13	130	330	190	44	865	82	7.4	8.6
11	6.0	14	27	14	450	250	178	38	840	152	6.4	7.8
12	6.0	14	30	16	500	*170	458	34	895	84	5.8	7.8
13	6.4	14	47	22	600	125	534	31	1,020	42	5.1	7.8
14	9.5	14	62	80	700	122	639	38	727	28	4.7	7.8
15	11	12	67	200	550	134	627	38	534	21	4.4	8.2
16	6.4	11	58	230	350	145	546	42	332	94	4.1	7.8
17	5.2	11	51	180	230	150	447	42	136	140	4.2	7.4
18	4.4	10	46	130	150	351	490	42	108	74	4.5	7.0
19	4.0	10	46	80	110	710	436	41	150	44	6.2	6.6
20	4.8	9.5	53	65	110	1,240	1,490	42	101	28	6.2	6.4
21	4.8	9.5	56	45	150	1,100	2,300	37	63	19.5	5.8	5.6
22	5.2	10	48	38	120	836	2,030	32	45	15.0	6.2	5.3
23	5.2	11	35	33	90	592	1,240	28	38	12.0	6.6	5.6
24	5.2	12	29	30	80	426	701	215	47	10.5	6.2	7.0
25	6.4	12	25	28	70	263	464	458	57	9.0	5.8	27
26	10	12	23	*25	60	140	240	512	85	12.5	9.8	14.0
27	21	11	21	23	55	99	127	568	160	17.0	11.5	12.5
28	46	10	19	21	55	311	93	546	192	10.5	18.5	15.0
29	43	9.5	17	20	55	611	75	447	265	8.2	21	15.5
30	38	9.0	16	20		1,200	63	416	324	7.4	27	12.0
31	31		15	19		1,620		1,220		6.4	35	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	375.8	46	4.0	12.1	0.072	0.08
November	364.5	23	9.0	12.2	.072	.08
December	1,080.5	67	9.5	34.9	.206	.24
Calendar year 1939	59,958.1	1,620	0.6	164	.970	13.21
January	1,452	230	12	46.8	.277	.32
February	4,819	700	17	166	.982	1.06
March	16,175	1,620	60	522	3.09	3.56
April	20,362	2,300	63	679	4.02	4.49
May	5,468	1,220	28	176	1.04	1.20
June	12,820	1,160	38	427	2.53	2.82
July	2,132.0	384	6.4	68.8	.407	.47
August	263.9	35	4.1	8.51	.050	.06
September	370.6	34	5.3	12.4	.073	.08
Water year 1939-40	65,683.3	2,300	4.0	179	1.06	14.46

Peak discharge.- Mar. 30 (12 m.) 1,620 sec.-ft.; Apr. 20 (3 p.m.) 2,030 sec.-ft.; Apr. 21 (3 p.m.) 2,460 sec.-ft.; May 31 (7 a.m.) 1,670 sec.-ft.

*Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 22 to Mar. 12. Discharge for periods of backwater from leaves and aquatic vegetation, Oct. 16 to Dec. 5, computed on basis of one discharge measurement, gage heights, and records for other stations in same drainage basin.

Connoquenessing Creek at Hazen, Pa.

Location.- Chain gage, lat. 40°49'00", long. 80°14'35", at highway bridge at Hazen, Beaver County, half a mile upstream from Brush Creek. Datum of gage is 852.31 feet above mean sea level (general adjustment of 1912).

Drainage area.- 356 square miles.

Records available.- October 1919 to September 1921, October 1931 to September 1940 in reports of U. S. Geological Survey; June 1915 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 21 years (1919-40), 485 second-feet.

Extremes.- Maximum discharge during year, 12,200 second-feet Apr. 20 (gage height, 13.9 feet, from graph based on gage readings); minimum discharge observed, 7.5 second-feet Oct. 15 (gage height, 0.82 foot).

1915-40: Maximum discharge, 16,700 second-feet (revised) June 29,1924 (gage height, 16.66 feet), from rating curve extended above 11,000 second-feet; minimum discharge observed, 6.0 second-feet July 21-23, 1936 (gage height, 0.82 foot).

Revisions: The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in previous reports.

Water year	Date	Gage height (feet)	Discharge (second-feet)
1937	Jan. 25	13.01	10,900
1938	Dec. 18	12.0	9,530
1939	Mar. 12	11.6	9,010

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read twice daily. Some regulation from operation of mills upstream.

Revisions.- Revised figures of discharge, in second-feet, for high-water periods in the water year 1937 and 1938 are given herein. They supersede those published in previous reports.

Day (water year)	Discharge (second-feet)	Day (water year)	Discharge (second-feet)
1936-37		1937-38	
Jan. 22	10,500	Dec. 18	9,270
25	9,350		
Apr. 26	9,300		

	Maximum	Minimum	Mean	Per square mile	Run-off in inches
January 1937	10,500	597	2,607	7.32	8.44
April	9,300	218	1,323	3.72	4.15
Water year 1936-37	10,500	28	676	1.90	25.77
December 1937	9,270	120	1,042	2.93	3.38
Calendar year 1937	10,500	23	696	1.96	26.54
Water year 1937-38	9,270	10	535	1.50	20.42

Connoquenessing Creek at Hazen, Pa.

(Continued)

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	53	23	39	66	284	1,660	306	2,900	540	59	103
2	17	40	32	37	65	306	1,390	454	1,780	401	48	78
3	20	34	56	36	64	2,320	1,270	375	1,250	306	42	59
4	19	30	80	35	64	7,420	2,580	327	948	246	35	52
5	15	27	76	*34	65	3,310	1,390	265	a752	171	33	40
6	12	27	73	34	90	1,960	1,040	230	540	142	30	34
7	11	25	71	35	170	1,530	690	213	375	124	30	34
8	11	31	66	36	240	1,040	940	213	327	116	60	49
9	14	31	62	37	180	818	2,070	201	351	110	56	1,090
10	14	32	56	39	500	630	1,320	168	351	171	40	272
11	12	30	56	42	2,550	454	1,100	156	421	135	34	213
12	11	27	58	50	1,390	427	3,060	140	882	129	28	153
13	8.8	25	59	70	1,180	454	1,580	135	482	120	24	118
14	8.8	25	91	150	720	818	1,390	146	351	95	24	80
15	8.2	24	95	1,170	630	1,110	1,110	163	327	80	56	69
16	8.8	23	87	508	540	850	1,110	176	690	75	40	64
17	8.8	23	76	350	482	785	1,130	171	454	106	32	57
18	8.8	22	78	250	401	1,250	3,520	151	306	81	27	50
19	8.8	23	69	190	427	2,900	4,180	140	246	64	26	42
20	10	23	205	150	*600	1,890	10,200	131	230	56	26	40
21	10	23	342	130	720	1,320	8,720	127	171	49	36	39
22	12	23	231	115	540	915	3,580	106	135	48	28	35
23	32	26	146	105	427	660	1,960	248	133	49	25	32
24	22	32	115	96	351	427	1,320	1,040	174	48	20	32
25	20	28	86	90	327	327	948	882	204	a53	20	53
26	54	27	70	*85	306	230	720	660	187	60	29	95
27	170	27	60	81	306	246	570	570	187	178	50	72
28	424	25	54	77	306	600	427	482	161	208	72	55
29	164	24	49	74	306	720	351	375	526	99	56	44
30	82	23	45	71		1,070	306	428	720	85	55	40
31	66		41	68		2,910		3,950		86	93	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	1,297.0	424	8.2	41.8	0.117	0.13
November	833	53	22	27.8	.078	.09
December	2,708	342	23	87.4	.246	.28
Calendar year 1939	140,175.6	8,260	8.2	384	1.08	14.65
January	4,284	1,170	34	138	.388	.45
February	14,013	2,550	64	483	1.36	1.47
March	39,981	7,420	230	1,290	3.62	4.17
April	61,632	10,200	306	2,054	5.77	6.44
May	13,129	3,950	106	424	1.19	1.37
June	16,561	2,900	133	552	1.55	1.73
July	4,231	540	48	136	.382	.44
August	1,234	93	20	39.8	.112	.13
September	3,194	1,090	32	106	.298	.33
Water year 1939-40	163,097.0	10,200	8.2	446	1.25	17.03

*Winter discharge measurement made on this day.
a No gage-height record; discharge based on interpolated gage height.
Note.- Stage-discharge relation affected by ice Dec. 24 to Jan. 14, Jan. 17 to Feb. 10. Discharge for period of backwater from aquatic vegetation, Oct. 1 to Dec. 3, computed on basis of two discharge measurements, gage heights, and records for nearby stations.

Slippery Rock Creek at Wurtemburg, Pa.

Location.- Chain gage, lat. 40°51'40", long. 80°14'35", at highway bridge at Wurtemburg, Lawrence County, 1 mile upstream from mouth. Datum of gage is 812.48 feet above mean sea level (general adjustment of 1907).

Drainage area.- 406 square miles.

Records available.- October 1918 to September 1920, October 1931 to September 1940 in reports of U. S. Geological Survey; January 1912 to September 1940 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 27 years (1912-32, 1933-40), 556 second-feet.

Extremes.- Maximum discharge during year, 8,450 second-feet Apr. 21 (gage height, 9.5 feet, from graph based on gage readings, affected by backwater from Connoquenessing Creek); minimum discharge observed, 32 second-feet Oct. 18 (gage height, 2.31 feet).

1912-40: Maximum discharge, 25,700 second-feet Jan. 25, 1937 (gage height, 12.05 feet, from floodmark), from rating curve extended above 8,000 second-feet; minimum discharge observed, 10 second-feet Aug. 22, 25, 1938; minimum daily discharge, 12 second-feet Aug. 25, 1938.

Remarks.- Records fair except those for periods of ice effect, which are poor. Gage read twice daily. Regulation from operation of mills upstream.

Discharge, in second-feet, water year October 1939 to September 1940.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	172	64	78	110	278	2,690	377	3,310	885	83	250
2	129	147	77	74	105	364	1,770	445	2,110	808	70	167
3	83	116	132	70	100	1,100	1,270	472	1,560	386	61	123
4	62	104	227	66	100	3,540	1,680	445	965	266	66	91
5	58	90	227	*63	110	3,100	1,500	390	592	209	54	78
6	56	79	189	62	170	2,230	979	346	400	177	54	68
7	45	79	158	64	230	1,460	808	322	350	157	78	50
8	45	97	145	67	260	1,050	770	310	298	144	70	63
9	48	97	132	70	210	808	2,130	278	346	121	52	740
10	45	90	124	75	700	592	1,660	266	420	141	57	274
11	43	79	116	82	2,190	500	1,140	239	322	163	52	160
12	45	74	129	94	2,350	500	2,540	209	808	138	46	118
13	38	74	132	110	1,990	500	2,350	205	500	123	42	98
14	36	77	197	300	1,560	660	1,560	209	314	107	44	83
15	36	66	212	913	695	1,000	1,270	243	231	91	50	75
16	36	62	197	1,180	530	845	1,140	274	430	93	42	70
17	38	62	172	695	445	592	1,000	359	290	107	37	61
18	36	62	177	500	400	1,210	2,910	290	270	118	33	57
19	42	62	186	400	382	4,660	3,780	262	390	93	54	59
20	38	62	291	310	500	3,720	c6,630	254	472	91	61	57
21	38	62	551	270	660	2,440	c7,340	235	250	83	59	52
22	35	68	419	220	530	1,460	c4,400	205	184	73	61	64
23	42	81	308	200	435	1,000	2,420	201	141	78	48	42
24	38	83	242	180	386	695	1,560	622	231	96	44	41
25	45	68	212	160	346	500	1,140	1,120	270	83	41	104
26	114	64	170	150	318	395	845	695	575	104	50	198
27	176	62	140	140	334	445	592	530	845	126	68	157
28	981	64	120	130	334	911	500	445	472	220	101	109
29	710	62	100	125	278	1,770	440	330	472	123	88	107
30	343	60	90	120		2,360	400	306	695	115	88	83
31	242		84	115		3,960		2,260		107	154	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	3,879	981	35	125	0.308	0.36
November	2,425	172	60	80.8	.199	.22
December	5,720	551	64	185	.456	.53
Calendar year 1939	175,834	8,840	25	482	1.19	16.11
January	7,083	1,180	62	228	.562	.65
February	16,758	2,350	100	578	1.42	1.53
March	44,645	4,660	278	1,440	3.55	4.09
April	59,214	7,340	400	1,974	4.86	5.42
May	13,144	2,260	201	424	1.04	1.20
June	18,513	3,310	141	617	1.52	1.70
July	5,626	885	73	181	.446	.51
August	1,908	154	33	61.5	.151	.17
September	3,699	740	41	123	.303	.34
Water year 1939-40	182,614	7,340	33	499	1.23	16.72

*Winter discharge measurement made on this day.
c Backwater from Connoquenessing Creek; discharge computed on basis of one discharge measurement, gage heights, and records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 26 to Jan. 14, Jan. 18 to Feb. 10. Discharge for periods of backwater from aquatic vegetation, Oct. 1 to Dec. 20, June 1 to July 22, Aug. 1 to Sept. 8, computed on basis of five discharge measurements, gage heights, and records for nearby stations.

Miscellaneous Discharge Measurements for the year ending September 30, 1940.

Stream	Location	Date	Gage Height	Discharge	Drainage area	Per square mile
Delaware River Basin						
Pohopoco Creek	Near Parryville	Oct. 2	0.88	45.3	110	0.412
Monocacy Creek	New Street Bridge, Bethlehem	Feb. 20		138	49.6	2.78
do	do	Feb. 21		133	49.6	2.68
do	do	Mar. 16		187	49.6	3.77
do	do	Apr. 10		154	49.6	3.10
do	do	May 15		120	49.6	2.42
do	do	June 27		147	49.6	2.96
do	do	Sept.25		158	49.6	3.19
do	do	Sept.26		153	49.6	3.08
Schuylkill River	Port Clinton, above mouth of Little Schuylkill River	Apr. 11		1,370	205	6.68
Schuylkill River	Port Clinton, below mouth of Little Schuylkill River	Nov. 2	1.42	142	343	.414
do	do	Nov. 18	1.67	197	343	.574
Little Schuylkill River	Port Clinton	Apr. 11		826	138	5.99
Harvey Run	Mouth at Chadds Ford	Mar. 4		18.0	3.92	4.59
Susquehanna River Basin						
Tributary to Lackawanna River	Mouth at Old Forge	May 9		4.80	9.21	0.521
Little Fishing Creek	Eyers Grove	Sept. 9	1.25	2.84	58.3	.049
Mosquito Creek	Mouth at Karthaus	Mar. 13		77.2	69.4	1.11
do	do	Mar. 31		1,770	69.4	25.5
do	do	Apr. 1		1,430	69.4	20.6
do	do	Apr. 2		663	69.4	9.55
do	do	Apr. 9		1,020	69.4	14.7
do	do	Apr. 25		378	69.4	5.45
do	do	June 6		136	69.4	1.96
do	do	July 20		24.4	69.4	.352
Sterling Run	Mouth at Sterling Run	Feb. 7		17.4	26.2	.664
Grove Run	Mouth at Sinnemahoning	Mar. 31		244	7.39	33.0
do	do	May 21		28.6	7.39	3.87
Hageman Run	South Williamsport	Jan. 17	.93	5.84	6.31	.926
do	do	Feb. 28	.51	.63	6.31	.100
do	do	Mar. 5	.93	7.27	6.31	1.15
do	do	Mar. 31	2.64	252	6.31	39.9
do	do	Apr. 1	2.28	157	6.31	24.9
do	do	Apr. 8	2.07	76.9	6.31	12.2
do	do	Apr. 12	1.69	38.6	6.31	6.12
do	do	Apr. 21	2.03	74.2	6.31	11.8
do	do	May 24	1.25	10.7	6.31	1.70
do	do	July 9	.66	.53	6.31	.084
do	do	Aug. 23	.38	.10	6.31	.016
Grafius Run	Williamsport	Jan. 16	.90	1.27	3.14	.404
do	do	Feb. 28	.68	.80	3.14	.255
do	do	Mar. 4	1.24	28.0	3.14	8.92
do	do	Mar. 5	1.07	12.5	3.14	3.98
do	do	Mar. 31	1.20	54.8	3.14	17.5
do	do	Apr. 8	1.20	41.2	3.14	13.1
do	do	Apr. 12	.84	10.3	3.14	3.28
do	do	Apr. 12	.82	9.28	3.14	2.96
do	do	Apr. 21	1.26	46.9	3.14	14.9
do	do	May 24	.61	1.38	3.14	.439

Miscellaneous Discharge Measurements for the year ending September 30, 1940.
(Continued)

Stream	Location	Date	Gage Height	Discharge	Drainage area	Per square miles
Susquehanna River Basin						
Muncy Creek	Sonestown	Sept.19	2.00	14.3	23.8	.601
Big Spring Run	Williamsburg	Apr. 22		2.83		
Little Juniata River	Tyrone	Apr. 9	3.13	818	101	8.10
do	do	Apr. 24	2.35	482	101	4.77
do	do	June 7	1.22	140	101	1.39
do	do	June 10	2.04	380	101	3.76
do	do	July 17	.70	40.3	101	.399
do	do	Aug. 27	.88	72.7	101	.720
Little Bald Eagle Creek	Tyrone	Dec. 5	0.66	5.92	45.1	0.131
do	do	Dec. 5	.66	5.21	45.1	.116
do	do	Dec. 20	.89	23.2	45.1	.514
do	do	Dec. 20	.90	23.6	45.1	.523
do	do	Feb. 17	1.00	30.0	45.1	.665
do	do	Mar. 4	1.37	82.0	45.1	1.82
do	do	Mar. 12	.89	21.5	45.1	.477
do	do	Mar. 12	1.33	69.1	45.1	1.53
do	do	Apr. 8	3.02	565	45.1	12.5
do	do	Apr. 9	2.73	469	45.1	10.4
do	do	Apr. 24	2.02	237	45.1	5.25
do	do	June 7	1.26	64.1	45.1	1.42
do	do	July 17	.85	18.1	45.1	.401
do	do	Aug. 27	.75	11.4	45.1	.253
Three Springs Creek	Mouth near Three Springs	Apr. 4		316	36.5	8.66
do	do	Aug. 2		.86	36.5	.024
Tributary to Clark Creek	Mouth near Carsonville	June 11		.24	.09	2.67
Codorus Creek	Near York, three-fourths mile below mouth of South Branch	Apr. 21		3,140	216	14.5
Ohio River Basin						
Mathews Run	Mouth at Youngsville	Nov. 11		20.1	15.7	1.28
do	do	Dec. 13		72.2	15.7	4.60
do	do	Mar. 30		191	15.7	12.2
do	do	Mar. 31		340	15.7	21.7
do	do	Apr. 1		218	15.7	13.9
do	do	Apr. 2		157	15.7	10.0
do	do	Apr. 6		101	15.7	6.43
do	do	Apr. 16		66.0	15.7	4.20
do	do	June 13		29.4	15.7	1.87
Tionesta Creek	Tionesta Creek Dam	Oct. 10	2.89	769	479	1.61
do	do	Nov. 8	2.38	404	479	.843
do	do	Dec. 9	2.88	691	479	1.44
do	do	Dec. 21	5.36	3,380	479	7.06
do	do	Dec. 21	5.32	3,390	479	7.08
do	do	Dec. 21	5.22	3,250	479	6.78
do	do	Dec. 22	4.65	2,530	479	5.28
do	do	Mar. 20	5.22	2,960	479	6.18
do	do	Mar. 30	5.96	3,960	479	8.27
do	do	Mar. 31	8.87	5,760	479	12.0
do	do	May 7	3.08	920	479	1.92
do	do	June 15	2.44	424	479	.885
do	do	July 9	1.95	239	479	.499

Miscellaneous Discharge Measurements for the year ending September 30, 1940.
(Continued)

Stream	Location	Date	Gage Height	Discharge	Drainage area	Per square mile
Ohio River Basin						
Tionesta Creek	Tionesta Creek Dam	July 24	1.82	166	479	.347
do.	do.	Aug. 10	1.61	97.2	479	.203
do.	do.	Aug. 13	1.56	82.6	479	.172
do.	do.	Sept.20	1.68	97.3	479	.203
do.	do.	Mar. 31		275	16.1	17.1
Cherrytree Run	Mouth, 1 mile north of Rouseville	Apr. 4		173	16.1	10.7
do.	do.	Oct. 8	2.53	99.8	629	.159
French Creek	Saegerstown	Sept.20	1.00	108	303	.356
Clarion River	Ridgeway	Sept.22	1.20	119	1,246	.096
Clarion River	St. Petersburg	Sept.10	2.10	86.1	263	.327
Chartiers Creek	Carnegie					

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